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ISSUE 03

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A graphic featuring a pencil on the left and a camera lens on the right, framing the text. The text is split into two lines: "EARN YOUR" in black and "TECH KARMA" in red.

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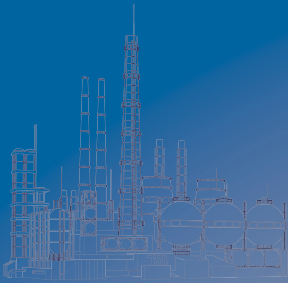
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From selfies to selflessness

If an alien race were to spy on our digital communication today, humanity as a whole would come across as a very narcissistic and self-centered species. Chew on this little factoid for instance: over 70 percent of all digital data generated in the last year comprised entirely of selfies. Okay, I just made that up, but you'd be forgiven if you thought it was true, given the number of selfies you see everywhere. There are duckface selfies, velfies, melfies and what have you. There's even a selfie visualisation website called selfecity.net, which I came across while researching the data visualisation story. It aims to investigate the style of selfies in five different cities across the world. Makes you wonder what this world is coming to, right?

Thankfully, altruism and philanthropy aren't new to geeks. Geeks the world over have been donating copious amounts of time to Open Source software development for a long time. Whether it was furthering the development of a Linux distro or creating a module for a particular software on any of the many online open source forges, or even those without coding skills donating their time to clean up documentation, if nothing else – geeks have been a surprisingly conscientious lot.

Considering the bad rep technology gets these days – getting blamed for everything from clogged arteries to clogged kitchen sinks – it's worth noting...rather, worth celebrating some of the things technology is getting right.

Tech altruism, in the digital era, has taken many forms. The first and most basic is the way people from all over the world come together to support causes with the help of technology. Some may call it armchair activism or lazy charity, but at the end of the day it has an impact, no matter how minor you think the individual contribution might be. The next is individuals sharing their knowledge or time towards a common goal or for greater good. Take the example of Wikipedia – the world's largest database of knowledge – all created by individuals with a sense of giving back to the community. The fact that today it's the sixth most used website in the world speaks volumes about how important and influential it has been for the world at large.

Erissolver.com, one of the most recent examples of harnessing collective intelligence and people's inherent desire to do good, is also

a fine example. The website uses structured brainstorming techniques to solve complex problems that often don't have a single solution or are beyond the capacity of a single individual to solve. The featured problem at the time of writing this editorial was "How can we stop the river water quality of a country from deteriorating?".

Technology today isn't just about addressing the bigger issues plaguing the world, like pollution or lack of health care (being worked on by some of the brightest minds in the world, and our cover story this month chronicles all of them), it even involves trying to find solutions to the seemingly small issues like saving some of the world's endangered languages. As shocking as it may sound, languages are also dying out at an alarming rate. By some estimates, only 10% of the world's 6000+ languages might survive to the next couple of generations. To save those languages, intelligent apps are being developed that will preserve them for posterity. Native speakers of those languages themselves – folks who are often octogenarians – are learning to use technology to help in the effort.

What is clear from all of the above examples is that such initiatives can only begin and end with YOU – the individual. You are at the center of the proverbial problem and also the ultimate solution. Towards this end, Digit is launching a technology outreach program, wherein we're seeking your support and the support of manufacturers we work with to take this gift of technology (and knowledge) to those who don't have access to it. The plan is simple: if you have spare technology products lying around – be it an old laptop, PC, mobile phone or even a solitary motherboard – we'll ensure it reaches someone who desperately needs it. So come forward in whatever little way you can. Details on page 89 and more in Robert's column.

Let us all pledge to move away from selfies and take a step towards selflessness. Do your bit and earn your tech karma.



Siddharth Parwatay
Assistant Editor
siddharth.parwatay@digit.in

"Considering the bad rep technology gets these days, it's worth celebrating some of the things technology is getting right"

A handwritten signature in black ink, appearing to read 'Siddharth Parwatay'.

Got feedback about this column?
Drop me a line at:
siddharth.parwatay@digit.in

Where have all the girl geeks gone?



Jayesh Shinde
Manager – Test Centre
jayesh.shinde@digit.in

"Time for some geek girls to step in and provide some balance and much needed perspective by using technology to help solve the world's 'real' problems"

Every year, on March 8, the world celebrates Women's Day. Also from Armenia to America, various countries recognise March to be Women's Month. It's only apt that I take this opportunity to look back upon some of the technological accomplishments of women and why they hold the key to our future.

We all remember the successful Mangalyaan mission, when India became the first country to throw something at Mars and make it stick to its orbit on the very first attempt. The biggest revelation in the next few days of the historic feat were the images of exuberant female scientists, aptly dubbed "Rocket Women", splashed across the pages of major newspapers and screens of news broadcast channels. They weren't sporting lab coats or anything giving away their profession – apart from an ID badge. These saree-clad, gajra-wearing women struck a personal chord far greater than Kalpana Chawla's tragedy or Sunita Williams' achievements in the past. These weren't cold, calculating scientists that we expected; they were mothers, daughters, sisters and wives. These ordinary looking yet accomplished ISRO women did something truly extraordinary by successfully reaching for the stars. They became the face of ISRO.

This doesn't change the fact that the field of technology is still a boy's playground. Silicon Valley, our generation's gigantic cauldron of techno wizardry, has a startlingly low number of female participation owing to a culture of selection bias and rampant gender inequality and discrimination. According to a Washington Post report published in Feb 2014, based on the analysis of tech startups and major tech companies, women account for only 14% of the workforce – those occupying engineering roles account for 12.4% of employees. Women represent less than 10% of venture capitalists in Silicon Valley and contribute to just 1.2% of open source software development. These numbers wouldn't be more damning if I didn't have this theory while growing up that when it comes to engineering, girls only opt for "boutique courses", meaning they're more likely to be found studying Computer Science, IT and Electronics rather than Mechanical, Civil, Chemical or Metallurgical Engineering,

for instance. Of course, this doesn't change the fact that their participation numbers are still low to begin with. Year after year, we see girls outscoring boys in SSC and HSC exams – both, at the state and national level. But why doesn't this translate into greater participation at the workforce? Unfortunately, the "gang of guys" syndrome exists at every level of our society, so guys need to grow up and work towards correcting this trend.

Research conducted in Europe and the US suggests that companies with at least one female board member tend to be more profitable as compared to those who have none. Either that, or companies who are more inclusive, more gender sensitive, tend to be more successful and profitable. Whichever way you look at it, giving more women the opportunity to succeed is a no-brainer win-win proposition by most indicators. And the field of technology and its applications can greatly benefit from women's perspectives.

Time for some geek girls to step in and provide some balance and much needed perspective by using technology to help solve the world's 'real' problems – poverty, healthcare, food security, water and other similar issues.

Building on Siddharth's point earlier about stagnating standards of technological innovation (Winning at technology itself, Jan 2015), how about attributing this to the failure of a group of men unable to think out of the box? How about allowing women entrepreneurs to rethink solutions to the problem of this slowing pace of tech innovations? We may not find an answer unless we gave them a fair shot. Ultimately, the idea behind increased women's representation in tech companies shouldn't just be about better profits or innovations. It should be about doing the right thing, not just for the sake of women but for all of us who're deprived of their uninhibited genius. **1**

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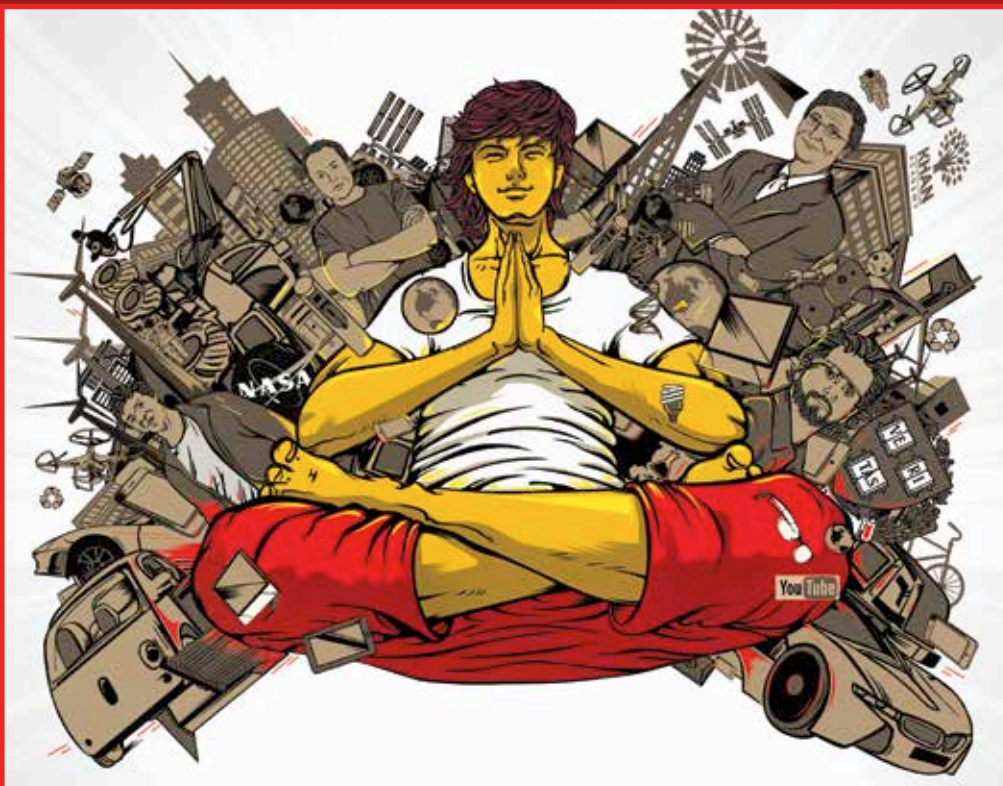
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Swarovski Shine
What if the world of these glowing smart objects was just a bracelet? The Shine is a multi-functional smart bracelet that can be used as a ring, a watch, a bracelet, or even a necklace. It's made of Swarovski crystals and has a built-in LED light that can be controlled via a smartphone app. It also has a heart rate monitor and a pedometer.

Snap
This isn't just a multifunction light bulb, it's a smart piece of art. The Snap is a smart light bulb that can be controlled via a smartphone app. It has a built-in LED light and a camera that can be used to take pictures or videos. It also has a built-in microphone and speaker.

Phaz Music P2
These headphones are made of a special material that can be controlled via a smartphone app. They have a built-in LED light and a camera that can be used to take pictures or videos. They also have a built-in microphone and speaker.

Bionic Bird
A bionic bird that can fly, it's a small robot that can be controlled via a smartphone app. It has a built-in LED light and a camera that can be used to take pictures or videos. It also has a built-in microphone and speaker.

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Drool-worthy products

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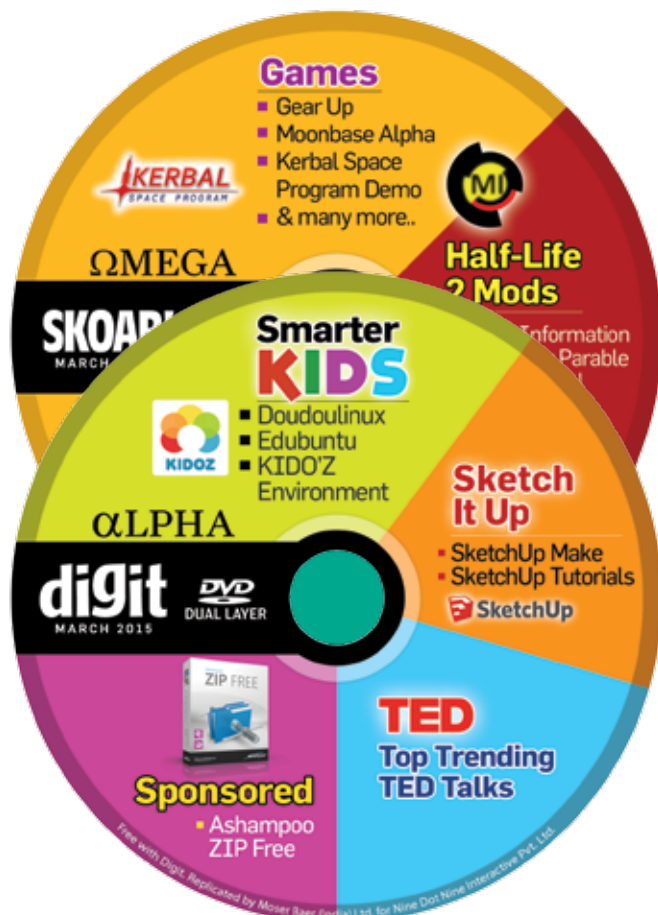
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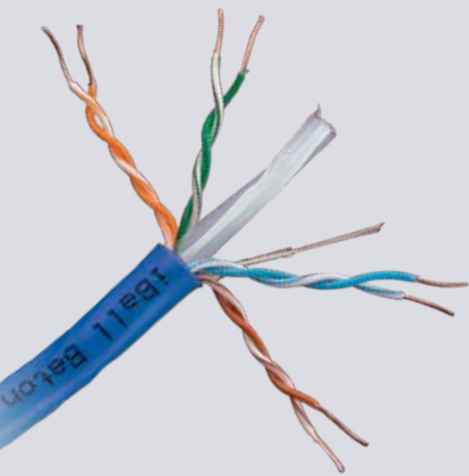
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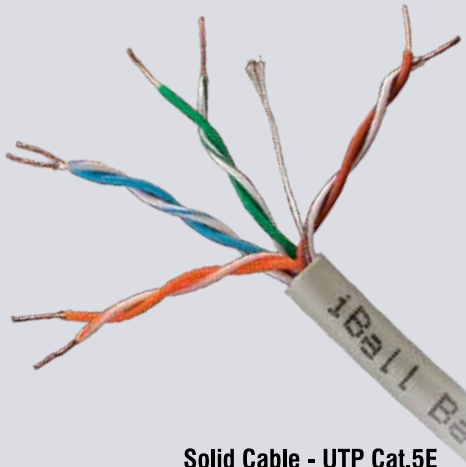


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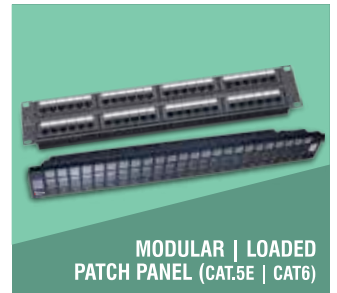
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DATA | VOICE



UTP PATCH CORDS
CAT.5E | CAT6



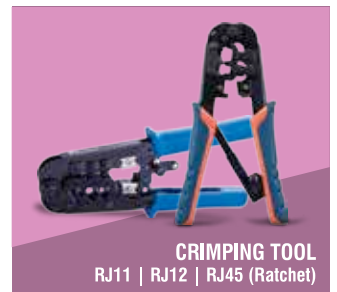
PUNCHING TOOL (Krone Type)
PUNCHING TOOL (110 Type)



MODULAR | LOADED
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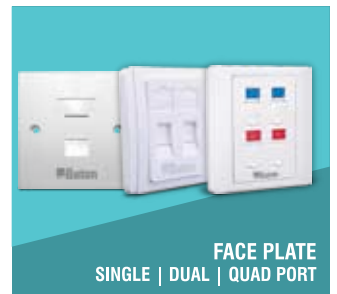
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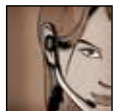
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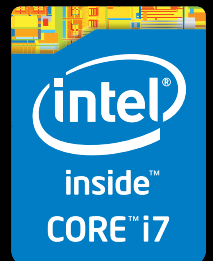
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Searching for silver linings

I'll be honest, I didn't think too much of this cover story idea when Jayesh first suggested it. There's nothing at all wrong with the idea of helping the world or even someone in your neighbourhood; nothing wrong at all...I just didn't think people (and by people, I mean you) would care.

It's a selfish world these days, and we see it all around us. We're all proud capitalists; survival of the fittest, why should I care if someone else is too lazy to study, or too dumb, and then can't get a good job to allow him the luxury of owning, say, an iPhone 6? Companies don't care about anything but their financial top and bottom lines, and people don't care about anything but themselves and their families.

Or so I thought.

For example, I hoped brands would help Jayesh and the rest of the team make the cover story's dream a reality, but I was also cynical, and warned them of the likely outcomes. Of course, no brand would outrightly say no to helping the needy – what kind of image would that portray of the brand? What would matter was their interest after more persistent follow-ups. Would they still be as committed?

As we're nearing the end of the month and this magazine has to go to print, I'm thrilled that every brand we've approached has committed their help, and very enthusiastically at that. It's almost as if they feel as strongly as we do about helping technology reach the needy in India. I've never been happier to have been so wrong about anything.

Further inside this magazine, you'll get details about this little project that's mainly being cared for by our Big Daddy (Jayesh), and I hope you'll pay great attention to it – not just for this month's issue, but for as long as you can possibly contribute.

I certainly hope you aren't as jaded and cynical as I was initially, because I really want to believe that it's not just the brands that Digit interfaces with, but also our community that genuinely wants to see a better, more tech savvy India.

However, it's not just hardware that can help. You can't throw phones, motherboards and CPUs at the problem and expect miracles. What our country needs at the moment is for people to start giving a damn about one another. How


do you show you care? You part with more than money, you impart knowledge, and give some of your time.

I realise that time is possibly way more precious than money to many of us, and that's why it's important that we give a little of that precious commodity as well. Don't just donate the hardware, find a child who's interested in technology and show him/her how to use the hardware you're donating. Volunteer to teach technology at government schools. Get creative and solve local problems in your area and help the needy around you – the country will automatically fix itself.

Even Digit – which is often everyone's best kept secret – is a way you can spread technology knowledge. Stop keeping it a secret and donate your collection to someone needy. The old issues may not be of much use, but you could donate the 2014 set to someone just beginning to get into technology. Buy them a subscription if you can afford it, share the Fast Track with someone looking to learn about one of the hundreds of topics we've covered, share the DVDs...there are so many ways.

Focus on what you can do and then do it, no matter how inconsequential it may seem. Whether or not you will change the whole world is unimportant, because you can change the world for a few people, and most importantly, you will change the world for yourself – there's no better feeling than helping someone, trust me.

Again, I urge you to not just keep it to yourself – if this issue inspired you to do some good, or even if you were already involved in an initiative, please share it with us at editor@digit.in. Perhaps your story can inspire more people and give them ideas about how to replicate what you did (or are doing) in their own locality or town.

Here's to silver linings – not only should we keep searching for them in our own lives, we need to become them for others. It's the only way to actually change the world. 



Robert Sovereign-Smith
Executive Editor
robert@digit.in

"Focus on what you can do and then do it, no matter how inconsequential it may seem. Whether or not you will change the whole world is unimportant"

Liked or hated this column?
Write in to robert@digit.in
and let me know your thoughts.



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✉ The first time I saw Digit magazine was around a decade ago. I remember because I'd just finished my high school and, subsequently, was granted pocket money privileges. Being a bike buff first, I went on to buy a popular automotive magazine. I did the same thing for many years, and as the years passed, it became easier to ignore Digit and categorise it as 'just another tech mag'.

But last month, I chose to take a peek at Digit, just out of plain curiosity. It wouldn't surprise you then that the issue I purchased in Jan 2015 was of Nov 2014, not that I mind. I have to say though, I expected the content to be filled with technological jargon that I'd barely be able to grasp, but as it turns out, I have some sort of know-how in this field after all.

Here's where I MUST commend you guys – the language. I'm not a grammar nazi, but it does put me off when my favourite magazines break all the rules of grammar. Digit articles were really well written and though I missed a few of the highly technical stuff, it kept me reading until the very end.

One funny thing though. In the Nov issue, you had printed an article on the negatives of too much social networking, and just a page or so later you said, "for more tech stuff, join our Facebook page" (maybe not in those exact words).

Overall, good job Digit. Hopefully, you'll be the first ever magazine I subscribe to.

Regards and wishes

—Ar. Nazeef Karim

4 We're glad to have you back with us Nazeef. Hopefully, we have lived up to the standards you expect from us. Your point about language and grammar is pertinent. We have to admit we have been slipping up. This issue should be better though. Also, too much social networking is indeed bad for you. But not following us on Facebook. That's an exception :-)

– Siddharth

☒ Reading India's #1Technology Magazine is the best thing in the world. This is my first letter to you. I started reading your magazine in September 2014. When I first saw the magazine,

Feedback for the February 2015 issue of Digit



the first thing that came to my mind was “Oh! This is what I was looking for.” because I was longing for such a magazine. It’s very helpful and is like a good friend, who doesn’t simply do things for his own interests. I’m very proud to be your reader, especially since some of my friends come to borrow it.

I love Digit for the following reasons:

1. It shows the new upcoming gadgets with basic description/ specification,
2. Your style of writing is good,
3. The images are of good quality and very attractive.

Once again, thank you so much for providing DVDs. Even though I'm not familiar with all the contents of the DVDs, I enjoyed it a lot. Tips & Tricks, Windows 10, the resurrection and Online Command & Control were awesome.

Here are a few requests regarding DVDs in the next issue:

1. Please include some basic tutorial videos of Adobe After CC 2014,
2. If there's a trial version of Windows 10 updater from Windows 7 or 8.1, please include it.

–Aleí Newme

your suggestion under consideration and we'll surely try our best to include them in upcoming issues.

– *Abhijit*


☒ I was reading the 'Fast Track to Emulate Everything' that came along with the February 2015 issue and realised it would be great if there was a Fast Track about computer hardware.

To be more specific, a Fast Track educating people about their computer's hardware; for example, telling readers what's the function of cache, cores or clock speed or why do you need memory in a graphics card.

Be very informative and mention everything, from processors to PSUs and even sound cards. Also, tell us when it was first manufactured and about its inventor, among other things. In case of RAM, you could tell us about DDR1, 2, 3 and 4, and the differences between them such as power consumption and core clock speed.

I hope you take my suggestion into consideration and there will be a Fast Track about this soon.

– *Abhigyan Pandey*

 We're proud to have you as a reader too Alei. As for your suggestions we've covered Photoshop CC tutorials in our Jan DVD but not After Effects. We've taken

■ We've already done an FT on exactly this topic. This was the 'Fast Track to PC Hardware' done back in September 2013.



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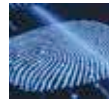
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Kitchen table entertainment

An innovative new projector that looks like an overhead bulb can transform into a projector for the kitchen table <http://dgit.in/BulbPro>



Need fingerprints

The Pakistani government has ordered mobile phone users across the country to submit their biometric details or face disconnection <http://dgit.in/NeedBio>

LETTER OF THE MONTH

✉ Hello Team Digit,

I'm a 15-year-old reader and subscriber of your magazine (Did I forget the word "Awesome"?). I'm also a great fan of the whole group behind this effort. Each issue you provide us with is unique and informative. Now I want to straight away come to some of the drawbacks and suggestions for Digit. I will divide these into two parts – the mag as a whole and the second part for problems regarding subscription and subscription copies.

So first, regarding the magazine:

1. I've surely seen a number of typos all over the pages, especially in the links in the header. I know it's impossible to completely eliminate the errors, but please try to minimise the mistakes.
2. The design for the DVD interface is very old, and I see letters seeking changes in this in every Digit issue. Please listen to us readers and change the interface.
3. Also, I've noticed that the 'Essentials' section on the DVDs is repetitive in all the issues. So please provide new software.
4. Can you provide more gadget reviews and comparisons in the magazine? I believe I now see fewer of them in the Bazaar section. (Is it true?)
5. I now observe that editorials from Robert and Siddharth are gradually



drifting away from reality. I may be young to tell you this, but I'd like to discuss such topics with your team. (Is it possible?)

Now, regarding subscription:

1. Let's start with the packaging. The adhesive used to pack the mag is of the worst quality I've ever seen. I have to literally tear it apart to open the copy.
2. Then let's come to the packaging of DVDs. They are mostly not packed properly and sometimes, even come out of their covers! Please look into this matter.
3. The latest months' issues brought up a new problem. Now, some issues come with many of their pages torn! I take good care of all my books and don't want them to be torn. This is a grave problem. So please try to send proper, untouched issues for the subscribers.

Hey, don't ever think that due to these minor problems, I dislike the mag. Digit is surely the best magazine out there for us tech enthusiasts. I'd like to thank the whole team for giving us such a great and fun way to improve our tech knowledge.

– Shashwat Gupta

📧 Torn? Send us pics please, I want to look into that. And you can discuss anything you want with any of us. You know mine and Siddharth's email as well. Discuss away.

– Robert

It has everything you could ever want to know about PC hardware.

– Siddharth

✉ Hey Digit!

I'm a huge fan of your magazine and have been reading it for over a year now. I've written to you a couple of times before too. This time, I have a couple of requests:

1. Could you include a Dota 2 poster in your issue since I'm a Dota 2 fanboy?
2. I heard that you take requests for Fast

Track too. So, if you could do a Fast Track on MOBAs (multiplayer online battle arena), it would be really cool.

3. Also, in the 'Learn' section of your magazine, you could teach the basics of Metasploit or something of that sort. I hope my requests are not too far-fetched.

– Anirudh Oppiliappan

📧 Hi Anirudh,

Good to hear from you again, you've become a regular in this section now.

Your requests aren't far-fetched at all and we'll look into all of them.

Though an FT on MOBAs might not be very likely, we'll definitely try to do a special in SKOAR! in the coming months.

– Siddharth

✉ Hello Digit,

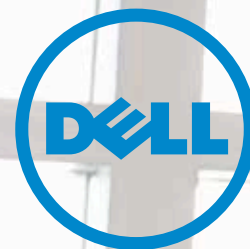
You guys are really awesome. This is my first mail to you, so let me tell you how I got to you. You might find it strange, but the magazine has changed me completely. I've been a tech kid since I was very little, probably from Class 4. I completed learning MS Office & all essentials of computing through courses. When I was in Class 8, I joined Hardware & Networking course of 2 months for Rs. 750 in summer vacation. But my school started & I couldn't manage the last 10-15 days of course. Although I insisted that the trainer change the timings, they avoided me since I was young, thinking they wouldn't be able to handle me. One day in our lab, a few books were lying on my table. Out of intense desire for revenge, I somehow managed to pick one and left the course the same day. The book I picked was Digit! I thought I'd found a substitute, but in fact, it was something more than I deserved. Being of average middle class background, I couldn't afford to buy editions for ₹200, but still managed to read them from libraries, etc. Today, days have changed. Though I'm in the third year of MBBS, I still buy the magazine with the enthusiasm of a little boy.

I've become a tech expert and most of my friends & family consult me for tech advice. Few friends who borrowed many old issues haven't yet returned them to me. You guys are fabulous and have proved that knowledge is contagious.

I like most articles by Robert, as they are very intriguing. He's truly insane. I'm very pleased to have all Fast Track PDFs given in the previous issue. Thanks for that.

Just out of curiosity, I have a request: Will you guys show us how a Digit is crafted and delivered – right from conceptualisation of cover stories to testing of products, printing and online order placement and delivery, just like in mega factories? I'm very interested in that.

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ease.



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impressive
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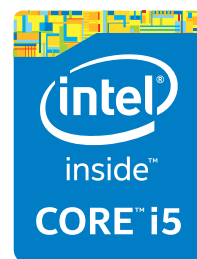
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Racially diverse emojis

Apple will add racially diverse emoticons with six different skin tones for emojis with its next update <http://dgit.in/OneEmoji>



Telegram hacked

Telegram, the popular instant messaging app for iOS and Android was hacked as part of their crypto contest <http://dgit.in/TeleHack>

I know you guys still make a lot of from advertisements, but frankly, I'm still attracted to the magazine and constantly (and subconsciously) stare at the right-hand side pages.

As for suggestions, I know you guys are already aware of your areas of improvement and always try to bring the best of technology to us. Yet sometimes, there's a problem with the payment gateway during online orders. Please look into it.

One of my friends used to say, "There cannot be something better than the best", and it's the same in your case. Thanks a lot and keep rocking!

– Parag Chole

📌 Your idea about covering how digit is made is something we've been toying with for a long time. In fact we were thinking of making a nice video out of it too. If you remember a few years ago we had included a video of how the DVDs are replicated in one of the DVDs.

– Siddharth

✉ Hello Team Digit,
I'm writing to you for the second time. We've always welcomed Digit with open arms and this is why your magazine stands tall among the chaos. Accept the fact that Digit is way more popular than any other tech mag.

Coming to the February issue. It was again a dynamite of information. Frankly speaking, the Feb issue scored way higher than the January issue. Both, the cover page and the cover story were very imposing and commendable. Thanks for replacing DGT with Skoar as it's always great to read them on hand rather than consuming information on my laptop via your e-book. The games reviewed were splendid.

Well, those were my words of appreciation.

Being a Digit lover, I've got a few suggestions.

- The poster was eye-catching, but it could have been better with its name or title.
- A major typing mistake on Page 86 of January issue: Under 'Gionee Elife S5.1' it was printed "Even 1GB of RAM feels

a bit less..." but under the Specification section of the same page it was clearly typed "RAM: 2GB." When we're talking about a brand like Digit, such mistakes should be avoided.

- Why don't you guys change your display picture in the magazine? Every Digit fan wants to see you all in a new look.

And hey, I have a question about Google's driverless car. The whole point of owning a car is to be able to drive it. Now what's the use of acquiring it when you know that it's driverless?

That's all. Keep Digitising us.

– Manish

📌 We're also very happy to have SKOAR back in print. Hope you like the poster we've included this time.

– Anirudh

✉ Hello sir,
This is my first letter to you and Digit. I've been reading it on and off over the past few years.

Recently, I bought the January 2015 issue, which I'd actually pre-ordered. Though it arrived very late (23rd January), I'm happy that I got this amazing issue. No complaints as the courier agency here is lethargic.

The first thing I read was your column, i.e. 'Win at losing' and while reading it I felt a deep emotional connection, which took me back in time and reminded me of similar moments when I was completely absorbed in technology. I was, and fortunately still am, very curious about the imperfect things around me that inspire me to make them perfect. That's what tinkerers do, don't they? I want to share one particular incident with you, which made me feel like I'd lost to tech and this affected my life deeply.

Our college had a weird rule: freshers weren't allowed laptops or PC inside hostels. But I was already practicing blogging and some web development and was very keen to buy a laptop for that. Ignoring all these rules, I managed to convince my parents to buy me an expensive Sony Vaio laptop. A month later, however, my Vaio was stolen from my cupboard. All gone, all my dreams and plans and what's more,

I had to face my parents and their anger. This incident taught me not to buy expensive and portable things using parents' money, take extra care of such things and possibly install some trackers.

As a Computer Science student, I, of course, still needed a PC, and this time, I was sure I wouldn't buy an expensive one. When previously my laptop gave me troubles, I literally felt helpless as I couldn't open it up and see what's inside since I'd paid a hefty amount for it. That's when I decided to make a PC that would be cheaper, tougher to steal, and give me some knowledge about computers while putting it together. I searched for possible and cheap options on the internet with keywords such as "budget gaming desktop" since I assumed that if a PC could handle high-end games, it could, of course, handle all the basic needs of a developer and designer. I even looked within forums and found a thread that suited my needs on Digit Forum.

I copied almost the entire list of equipment mentioned by the writer for a PC under my budget.

I learnt how to assemble it by watching videos on the internet and came to know about things to avoid, such as how to protect PCs from static charge. Installing my PC from scratch was a proud moment for me as I learned something, which not everybody knows. Now if I mention that I made my PC by myself in some talks, everybody drool over my work and praise me.

Moral of the story: everything happens for a reason; even losing is a reason of winning later. In my case, my laptop being stolen became the reason for me learning how to build awesome desktop PCs.

Thank you, sir for giving your time to read my story. You refreshed my memory and again made me realise what my real passion is.

Wanting to lose more to technology.

Ayush Mathur

📌 Thanks for your mail Ayush, it means a lot that you took the time to share your story.

Keep losing the small battles, and you'll surely win much bigger prizes in life.

– Robert

13 LATEST GADGETS TO GRAB



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HTC Desire 526 G+

HTC Desire 526 G+ is a dual-SIM smartphone powered by a 1.7 GHz octa-core processor that can handle multitasking with ease. It has a 4.7 inch qHD display that is ideal for surfing the web as well as playing games. The smartphone has an 8 MP rear autofocus camera with LED Flash and 1080p video recording. It has a 2 MP front selfie camera with 720p video recording. It comes with 8/16 GB internal memory expandable via microSD card slot. It runs Android 4.4 with hTC Sense UI on top. Connectivity options included are Dual-SIM, 3G, Bluetooth, WiFi, GPS and USB support. The Desire 526 G+ is backed by a 2000 mAh battery.



Nokia Lumia 435

Nokia Lumia 435 is a Windows Phone 8.1 based smartphone with the Lumia Denim update out-of-the-box. The smartphone is one of the most affordable Windows Phone by Microsoft. It has a 4 inch display with 480 x 800 pixels resolution. The smartphone has a 1.2 GHz dual-core Qualcomm Snapdragon processor with 1GB RAM. It has 8GB inbuilt memory expandable via microSD card slot to 128 GB. The smartphone comes with a suite of Microsoft services including Microsoft's Office suite, Outlook and Skype integration. It comes with free 30 GB OneDrive cloud storage and is preloaded with Here maps.



Samsung Galaxy Alpha

Samsung Galaxy Alpha is a premium device with an all metal design that gives it a luxurious feel. It has a very slim body at just 6.7 mm and has a 4.7 inch HD display that is compact and easy to use. It runs on Android 4.4 OS upgradeable to Android 5.0. It is powered by octa-core processor with 2GB RAM. The smartphone comes with an inbuilt fingerprint sensor for additional security. It has a 12 MP rear camera with LED flash that clicks great images even in dim

light conditions. The rear camera has features like geo-tagging, touch focus, smile/detection and panorama view. The smartphone has a 2.1 MP front camera for clicking selfies and video chatting.

Karbonn MachOne



Karbonn MachOne is a dual sim smartphone with a 5 MP front camera with LED flash for selfie lovers. It has an 8 MP rear camera with LED flash and HD video recording. The smartphone has a compact 4.7 inch display screen with 720 x 1280 pixels resolution. It has unique lock-screen feature which brings all notifications from apps, date, time updates right on your screen. The smartphone is powered by a 1.3 GHz quad-core processor and runs on Android 4.4 upgradeable to the latest Android 5.0. It has 8 GB inbuilt memory expandable via microSD card slot.



JBL Go Wireless Portable Speaker

JBL Go Wireless is a pocket sized portable speaker designed with a minimalist approach. The speaker comes with Bluetooth connectivity and allows you to play your favourite sound tracks by pairing it with your mobile phone. It comes with an Aux-In slot that allows you to connect to various other media devices to it. The small palm-sized portable speaker comes with an inbuilt mic to take calls. It supports echo-cancellation & noise-cancellation technology that gives you crystal clear sound without any kind of sound distortion.

Micromax Canvas Hue

Micromax Canvas Hue is a budget smartphone backed by a powerful 3000mAh battery that according to company claims can deliver 30-days battery life with the handset's super power saving mode. The Canvas Hue has a 5 inch display HD AMOLED display with 720 x 1280 pixels resolution. The smartphone has a sleek design with a brushed metal strip that gives it a premium look. It has a 1.3GHz quad-core processor with 1GB of RAM. The smartphone runs Android 4.4.2 KitKat upgradable to Android 5.0 Lollipop. The Canvas Hue has 8MP autofocus rear camera with Sony Exmor RS sensor, and LED flash, which clicks clear images even in dim light. The phone also has a 2 MP fixed-focus front camera for clicking selfies.



Samsung Tizen Z1

Samsung Tizen Z1 is a compact phone with a 4 inch display and 480 x 800 pixels resolution. The smartphone is powered with Samsung's new Tizen OS and is powered by a dual-core 1.2 GHz processor. It has a clutter free interface and comes preloaded with popular news, cricket and social networking apps. The Samsung Z1 comes with support for 14 regional languages and predictive Hinglish. It has a 3.15 MP front camera with LED flash for clear images and a VGA front camera. The rear camera includes features like geo tagging and face detection. It is backed by a Li-Ion 1500 mAh battery that allows you to stay connected on the web for hours with Samsung's Ultra Power Saving Mode.



BlackBerry Classic

BlackBerry Classic is a performance driven mobile phone with a QWERTY keypad that makes it easy to use. This smartphone comes with integrated BlackBerry Assistant that allows you to manage your contacts, emails, etc seamlessly with voice & text commands. It comes with an Instant Previews function that allows you to preview BBM messages, texts & emails from within any app on your phone. It has a 3.5-inch display with

720 x 720 pixels resolution. The BlackBerry Classic is powered by a 1.5 GHz Snapdragon S4 dual-core processor with 2 GB RAM which makes multitasking easy. The smartphone runs on BB OS 10.3.1. It has 16GB internal memory, expandable via microSD card slot to 128 GB that gives you ample space for all your documents, contacts, music, etc. The smartphone has dual cameras, an 8 MP rear camera with autofocus and LED flash, and a 2 MP front camera.

Celkon Campus Whizz Q42

Celkon Campus Whizz Q42 is a sleek handset powered with Android 4.4. The smartphone has a quad-core 1.3 GHz processor paired with 512 MB RAM. The smartphone runs on a Mediatek 6582 processor which offers 4 ARM Cortex A7 cores along with a Mali-400 MP2 graphics processor. It has a compact 4 inch display with 480 x 800 pixels resolution. It has a 5 MP rear camera and a 1.3 MP front camera with LED flash that clicks good pictures even in dim light. The smartphone comes with inbuilt G-sensor and the proximity sensors for easy navigation and playing games. It comes with dual sim (GSM+GSM) with dual standby that helps you keep your personal and professional life separate. Apart from dual sim the smartphone supports 3G, Bluetooth, USB, WiFi, GPS and integrated FM Radio. The budget Celkon Campus Whizz Q42 packs a Li-ion 1400 mAh battery.



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iBall Q800

iBall Q800 is a stylish tablet with a 7 inch capacitive display screen that makes it easy to play games, surf web or watch videos. It is powered by an ARM A7 based Quad Core 1.3 GHz processor and runs Android 4.4.2 KitKat Operating system (OS). The tablet clicks clear images with its 5MP primary camera and has a 2MP front camera for clicking selfies. It offers 8 GB internal storage memory expandable up to 32 GB using a microSD card. The tablet supports dual-sim connectivity which helps you manage your personal and professional life easily. Connectivity options included in the Q800 are 3G, Bluetooth and Wi-Fi support that gives you quick internet access. The iBall Q800 has a powerful 3000 mAh battery that lasts all day and is ideal for people on the move.



Nikon D5300

Nikon D5300 with 18-55mm Lens is a light weight easy to use DSLR. The camera comes with 24.2 MP CMOS image sensor and the fastest processor by Nikon, Expeed 4. The Nikon D5300 offers six different settings for clicking images including Neutral, Monochrome, Vivid, Standard, Landscape and Portrait. The camera comes with a D-Lighting function that helps in capturing clear backlit scenes. The camera comes with integrated WiFi connectivity that helps you share images easily with your friends and families. It comes with a free Wireless Mobile

Utility app through which you can control the D5300 with your smart-phone. The camera comes with GPS and USB support. The Nikon D5300 DSLR is ideal for amateur as well as experienced photographers.



HTC RE

HTC RE 16 MP digital cameras is a fun and easy-to-use sports action camera device that can click images from multiple angles. It has a waterproof design and can capture high quality images underwater. RE has a 16 MP camera with 146 degree wide view and full HD video recording. The camera comes with a slo-mo function that can record time-lapse videos with 4X magnification at 720p. HTC's RE digital camera comes with a built in RE app that helps you stream images and videos directly to your smart phone. The smart app allows you to your smart phone as a shutter trigger and remote view-finder for this digital camera. It supports WiFi and Bluetooth connectivity so you can share images with your friends and family with ease.



Lenovo A7-10

Lenovo A7-10 has a sleek design and comes with a 7 inch large wide view IPS screen. The tablet is powered by a quad-core 1.3 GHz processor with 1 GB RAM for easy multi-tasking. It runs on Android 4.4 OS upgradable to Android 5.0. It has 8 GB internal memory expandable up to 32 GB via microSD card support. The Lenovo Tab 2 A7-10 comes with integrated Dolby enhanced audio sound technology that offers amazing voice clarity



for music lovers. It has inbuilt G-Sensor and Accelerometer sensors for gaming. The tablet comes preloaded with popular social networking, news, music and office apps as well as gives you access to thousands of apps and games from the Google play store. The Lenovo A7-10 is backed by a 3450 mAh battery.



Canvas selfie **CAN** INSTAGLAM

Let the world see how stunning you can be. Introducing Micromax Canvas Selfie, a phone with in-built beauty tools to make every click a super glamorous one. Its advanced apps, tools and features, matched with equally sophisticated looks, turn this phone into your perfect make-up accessory.



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Skin



Teeth
Whitening



Skin
Whitening



Removes Oil



Fade
Dark Circle



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THIS MONTH: A MOTORBIKE, BICYCLE, SMARTGLASSES, and more...

> TEMPTATION

If you're wondering what to do with yourself or how to spend some time getting cultured, this is for you...

THIS MONTH: BETTER CALL SAUL, WHIPLASH, DOROTHY, JOHN MAYER, and more...



Equil Smartmarker

Are you always making notes during meetings? Do you shed a silent tear when your boss erases the whiteboard he spent the last hour writing on? Comprising of two components, the Equil Smartmarker works off any whiteboard and marker. It's as simple as sticking the reader/sensor on the board and attaching little rings or sleeves to the marker. Once the meeting is over, just transfer the captured image.

> DESIRE

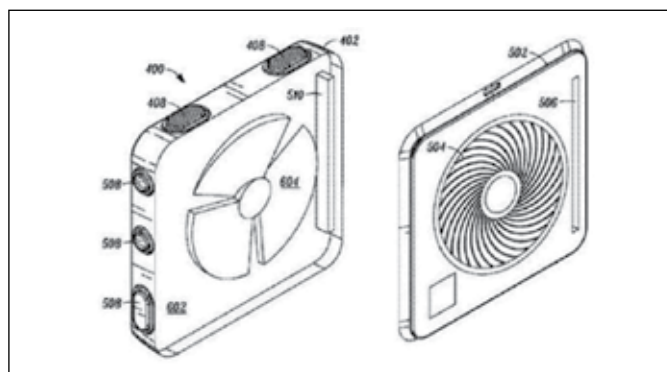
Google Smell

Are you plagued by body odour? Google has a solution

While Google may have fooled us before with an April Fool's prank on these lines, this one, on the other hand, seems legit. Mostly because it's not April and the info is from a patent release.

Based on its latest patent filing, Google seems to have successfully managed to define the size of the box into which conventional wearable devices fit, and it's definitely stepped out of the box. Dubbed a "fragrance emission device", this piece of tech fits under your clothes and blasts BO away before it blows your friends away.

This little connected device has a multitude of sensors that can detect changes in body temperature and sweat



levels. It can literally smell your body odour and release fragrances to neutralise it, leaving you literally smelling like roses. The fan built into the device acts as an aerator and can spread the fragrances effectively.

This potential face saver is also well connected (via

Bluetooth, Wi-Fi etc.) and can track the locations of the user's contacts via social media. It would be totally cool if the device could figure out the kind of fragrances your crush likes and make you smell irresistible everytime you're around him/her. We hope her dad didn't use Brut.

i(don't)Car(e)



Apple seems to be building an electric car and is on a hiring spree for auto execs. Our bet is the vehicle will look gorgeous, but let's hope Apple Maps is not used for navigation. digit.in/appleelectricar

VR for the family

Virtual Reality headsets are passe. The next step is VR projection. Equipped with a fisheye lens, Immersis maps the room and works with existing hardware. We can't wait. digit.in/Immersis



Premium Sound MicroSD



Sony's reason for charging \$160 (₹9,964) for its latest MicroSD is that it produces less noise and is perfect for listening to music. digit.in/sonyfleecesagain

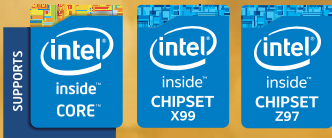
Read the fine print

Swedish optics specialist, Eric Tremblay has announced an innovative contact lens that works in conjunction with a set of smartglasses. It's still a work in progress digit.in/oomincontactlenses



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Virtual Pong

If you enjoyed playing Pong, wait till you see this

If you're getting a nostalgic kick out of playing Pong on your smartphone or computer decades after it went out of style and still think that the Nintendo Wii has been the best console so far, you and the arguably slim bunch who fall into this category have a reason to be excited. Galaxy Tennis (at least that's what it says on the box) replaces the ball with an orb of light and the rackets with two wands. This contraption does away with flat surfaces, a physical ball and the need for gravity (which played a key role in the traditionally console-driven game). Instead, a projector powered by AAA batteries projects an orb of light onto the walls and ceilings. You and your opponent battle it out, swinging wildly (hopefully not knocking over a lamp), virtually hitting the orb across the room.

The matches are played for 11 points and the last one there is a rotten egg. Rated for ages six and above, it's obvious that this product isn't fun just for kids. It's available for purchase at Sharper Image. The entire device can be powered by AAA



batteries, with the wands needing two each and the projector needing three AAA batteries.

SPECIFICATIONS

Price: ₹3,000 (Approx.) | **Length:** 8-inch | **Breadth:** 5-inch | **Height:** 2-inch | **Weight:** 1 kg. | **Battery:** 4 AAA + 3 AAA



Atongm W008

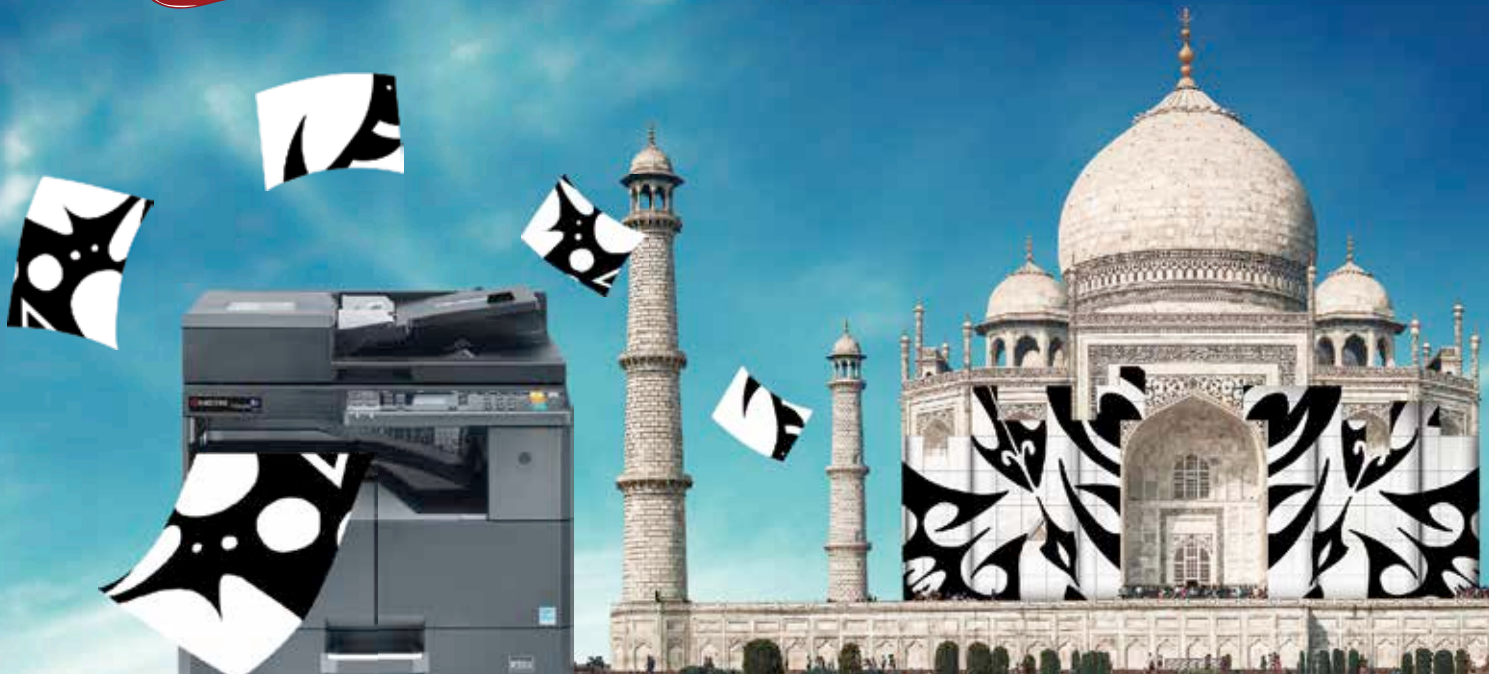
Every brand wants a piece of the wearable segment and Atongm is determined to not be left behind. The W008 smartwatch was sent to us by Gearbest and sports a camera which is something you don't see in this price range. We ended up getting the snazzy fluorescent orange coloured model that is 2G capable and supports microSD cards of up to 32GB. In the era of smartphones that are limited to 8 or 16 GBs of storage space this is a much welcome change. Aside from the weird name, the device also has high-end features like Sleep Monitoring, Prolonged Sitting and Anti-lost. All of which has been packed into a really smooth and polished user interface. The stainless steel watchface and the rubber-polymer band makes the smartwatch very sturdy, surprisingly giving it a premium feel. You can use it with Android and Windows Phones alike and is available in four colours — black, white, orange, silver and orange.

SPECIFICATIONS

Price: ₹4,347 (Approx.) | **Dimensions:** 2.2 x 1.7 x 0.5-inches | **Display:** 240x420 TFT | **Camera:** 3.1 MP | **Screen Size:** 1.54-inch | **Weight:** 46 g | **Battery:** 350 mAh



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It's a V22 Osprey! It's a Sea Harrier!

Not just another drone

You're probably wondering what a V22 Osprey and Sea Harrier are. The two names are used interchangeably for a helicopter and plane rolled into one. This fighter aircraft, that can take off vertically, is used by the Indian and British Navy, respectively (they also happen to be birds...sort of). Why they have a place in this section has everything to do with yet another drone. While we're used to seeing several quadcopters on tech websites and magazines, they're pretty slow and don't look as cool when they fly, unlike drones that take on the shape of a conventional aircraft. Sadly, for these drones to work, you need a landing strip for takeoff and landing.

Well, that problem has been identified and solved. The aircraft is available for pre-order on Kickstarter. Developed by Krossblade Aerosystems (yes, that's a very cool name), the SkyProwler (an even more badass name) is a "high-performance, multi-mission, VTOL Transformer Drone (we don't know what that last bit means, but we're listening intently).

VTOL stands for 'Vertical Take-Off and Landing', meaning the SkyProwler can take off like a helicopter and fly away like a



jet. It comes with an internally balanced action cam that shoots 4K video at 30 fps. According to its Kickstarter page, you can also control the SkyProwler using your voice and the GPS coordinates of your controller. You can pre-order your almost-ready-to-fly kit with no video or radio for \$479 (₹29,829 – early bird) or spend \$1,479 (₹92,089) and fly this baby straight out of the box.

SPECIFICATIONS

Price: ₹18,500 (\$299) | **Bluetooth Profile:** Human Interface
Battery: 3 cell Li-ion 5000 mAh | **Top Speed:** 134 kmph
Endurance: up to 40 minutes | **Range:** up to 69 km.



Sophia

Sophia, a Kickstarter project, is an attempt to make rope-jumping interesting by interfacing with a sports tracking app. It connects to your Android or iOS smartphone through Bluetooth, using a companion app that integrates with Google Fit or iOS HealthKit. And as the trend goes, the app has a social element which means you can challenge your friends to a game of skipping and post to social networks your workout stats.

The handles of the skipping rope contain a triaxial accelerometer and an optical module, which supposedly count the number of jumps with high-precision. The team behind Sophia, FitFox Ltd., claim to have re-engineered the classic handles of a skipping rope, resulting in an ergonomic handle that fit perfectly in your hands. The device might sound too fancy, but hey, why not.

SPECIFICATIONS

Price: TBA | **Grip Material:** Leather | **Cord Material:** High-quality polymer | **Display type:** OLED | **Weight:** 164 g | **Battery Life:** One month @30min/day

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Sleep Smart

While it's important to track how much water you drink and the kind you exercise you're getting, we usually overlook the quality of our sleep. It's important to grab between 6-8 hours of sleep which we usually don't and it's largely because it's getting harder for us to fall asleep. The Luna is a smart bedsheets that can monitor your sleep as well as prepare a nice warm spot for you on your side of the bed. The bedsheets can track your body temperature, sleep patterns, heart rate and even wake you up when you're sleeping light so you don't wake up feeling groggy.

Tissot Pocket Touch

While smartphones may very well phase out watches targeted at the average joe, they'll never replace watches aimed at the uber rich. After producing the marvellous T-Touch, the watch with a touchscreen dial, Tissot has now moved its latest offering from your wrist and to your pocket. Probably because Tissot knows that your wrist already has a wearable device, it has created the new Pocket Touch as a pocket watch with an analogue dial and digital display built into it. The sapphire crystal glass protecting the dial is touch sensitive and the 2 mm diameter chassis hides sensors that even your smartphone doesn't have. This pricey \$950 (₹59,161) watch is waterproof up to 330 meters and comes with a snazzy chain that feels just right.



Hello Barbie

She's 55, but that doesn't mean you can't teach her new tricks. This popular toy from Mattel has another reason to have a prohibitively high price tag on it, and this time it's because she's smart. This internet-connected Hello Barbie with built-in speech recognition software can not only have conversations with your kid, but also remember the things she said and incorporate them into their conversations. The doll is either creepy or useful if it helps you catch little white lies your kid tells you.



APP WATCH

Frankly.Me



Frankly.Me is an app that allows users to ask questions to celebrities, who reply through video selfies. The app was originally created to form a communication channel between the general public and celebrities from different areas. It has big names like Arvind Kejriwal, Javed Akhtar, Kiran Bedi and many more whom you can get in touch with. Needless to say, you can like, share and comment on answers that celebrities give.

Android: <http://dgit.in/FranklyMeAnd>
iOS: <http://dgit.in/FranklyMeiOS>

Instabounce



Instabounce is an event aggregator, which tells you the events that are going on in your city, just like Bookmyshow and some others. Its USP is in last minute bookings, which you can make through the app and get discounts while doing so. The app basically brings a curated list of events in your city, allowing you to book tickets for them through the app. There will also be special discounts exclusive to Instabounce.

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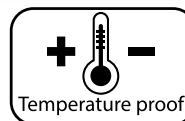
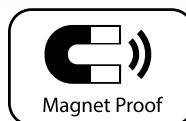
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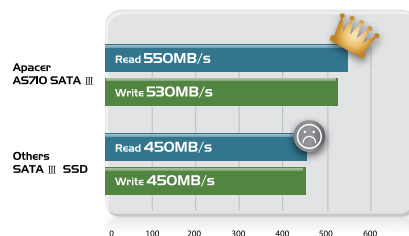


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Ferrari killer 6.0

The Corvette Z06 will win you races

If we were a certain auto mag with a name referring to the highest theoretical gear you can have on a car, we'd be having a crisis in our pants, but we're a more dignified tech magazine, so instead, we'll just stand in the corner and gawk. Over the years, the Corvette has progressively moved from being a sports car that's easily stumped by corners to a proper track monster that even has a land speed record under its belt at the Bonneville Salt Flats. For 2015, the Z06 – the souped up version of the Corvette Stingray – puts out 650 horsepower using its 6.2-liter V8. It also looks sharper with a giant splitter on the front and a reasonably-sized wing at the back (thank you Chevrolet for not making Corvette drivers look like tools). On paper, numbers like that look better than a Ferrari 458's, which only has a 4.5-liter engine and puts out 561 horsepower. While comparing a Ferrari to a Corvette may be like comparing apples to bananas, at the end of the day, the Corvette Z06 only costs about \$80,000 (₹49,81,200), whereas the Ferrari will cost you that and your firstborn or \$2,43,000 (₹1,51,30,395).

While the rest of the world is moving away from gas guzzlers and towards hybrids, EVs and smaller engines with massive turbos *cough Mustang cough*, it really doesn't make much sense to be in



awe of a huge supercharged V8. Then again, when you can beat a Ferrari in a quarter-mile drag, the grin you'll have on your face will make up for every penny spent on petrol.

SPECIFICATIONS

Price: ₹49 lakhs (approx.) | **Power:** 650 hp | **Torque:** 881 Nm @3600 RPM | **Weight:** 1600 kg | **Top Speed:** 322 km/h (est.) | **0-100:** 2.95 sec



Ricoh NV-10A

You could be an enthusiastic nature lover or a budding spy or just someone who has a fascination for peeping into your neighbour's houses, Ricoh's new enhanced binocular is here to aid you in your shenanigans. Using Pentax's "Atmospheric Interference Reduction" technology, one button will clear out fog, rain or snow. The resulting image is actually a set of digital enhancements that include increasing colour saturation, de-noising and adjusting the image contrast. It also lets you capture images and videos, with image stabilisation and night vision. With the IP64 protection rating, it is clearly dustproof and waterproof. The features do indeed look tempting but not until you look at the staggering price you need to pay, to enjoy them.

SPECIFICATIONS

Price: ₹ 2,60,463 (approx.) | **Dimensions:** 225 x 166 x 83 mm | **Aperture:** 75mm to 150mm (f/2.8 to f/3.5) | **Sensor:** 1/3" colour CMOS Sensor | **Display Panel (Eyepiece):** 800 x 600 | **Video Format:** Motion JPEG (720 x 480, 30fps, no audio) | **Image Format:** JPEG (720 x 480) | **Magnification:** 6.6x to 13.2x (approx.) | **Weight:** 1.3 kg

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Super Secret Flash Drive

If you've read or seen the *Da Vinci Code*, you're probably familiar with the Cryptex – the portable vault, shaped like a cylinder, with alphabets and millions of combinations. With data theft becoming increasingly common, even flash drives have passwords. Now, they also come with combination locks. Presenting the Cryptex USB flash drive. Pick it up at Amazon.com for \$50 (₹3,113). Interestingly, a few years ago, a company posted its take on a similar product featuring alphabets. Sadly, after being successfully funded, they disappeared. Too bad for everybody who pre-ordered it. At least we have this now.

Run Tomatan, Run!

Always looking out for its readers, we at Digit would like to tell you that tomatoes are an excellent source of vitamins and wonderful when it comes to fighting fatigue; especially while running.



Sadly, tomatoes are hated almost universally for their taste. But, there's a new way to enjoy them. Presenting Tomatan: a tomato dispensing robot that feeds you tomatoes as you run. Built by the Japanese company, Kagome, Japan's largest supplier of tomato juice and ketchup, Tomatan sits atop your shoulders and dispenses the tomatoes as you run. It even has an built-in timer, so that the

delivery of tomatoes is well paced. Now, all we need is a volunteer and Team Digit will win the next Mumbai Marathon.

The World's Most Annoying Bracelet

Built by Moff, the toy is the latest addition to the world of 'smart' objects that pairs with your smartphone. The companion app helps you choose the kind of sounds that are generated with each swish of the wrist. From the sprinkle of fairy dust to the sounds of gunfire, the Moff bracelet is on Kickstarter and can be picked up for about \$49 (₹3,051). Our only question: Can it make light saber sounds?



SECURITY WATCH

Hackers rob \$1 billion from 100 banks



Cybercriminals from Russia, China and Europe have stolen about \$1 billion from 100 banks and financial companies across 30 countries. According to a Kaspersky report, hackers started their heist in 2013 with the help

of malware. 'Carbanak', the hacking group (as labeled by Kaspersky) sent malware through emails containing links and videos to bank employees and infected the employees' PCs and the companies' surveillance systems. Thereafter, the hackers recorded sensitive data from these companies' systems and used it to transfer money to their own fake accounts or made ATMs automatically dispense cash at a certain time so that they could collect it.

WhatsApp Privacy is 'broken'



Maikel Zweerink, who previously developed a web tool called 'WhatsSpy', has brought out WhatsSpy Public – a web-oriented application that can track every move of who-ever you like to follow. He claims that the app is set up as a "proof of concept

that Whatsapp is broken" in terms of privacy.

According to Zweerink, the app can track online and offline status messages of a user (even though privacy options are set to nobody) as well as profile pictures and privacy settings. The tool features a simple GUI to view the timeline of a user and can compare it with another tracked user.

ThreatExchange: Facebook looks to boost cyber security



Facebook has teamed up with tech giants Pinterest, Tumblr, Twitter and Yahoo to develop a new social platform called 'ThreatExchange', where security professionals can share information on cyber

threats. ThreatExchange is based on Facebook's existing infrastructure, and has layered APIs on top of it to allow partner companies to access threat information. "Threat data is typically freely available information like domain names and malware samples, but for situations where a company might only want to share certain indicators with companies known to be experiencing the same issues, built-in controls make limited sharing easy and help avoid errors by using a pre-defined set of data fields", explains Facebook.

A ride on the woods

Take a ride on this work of art

Bicycles have always been a work of art. When the words “high performance” are added as a prefix, words escape us as we try to explain its beauty. It’s a blend of carbon fibre and aluminium, however, in the hands of a great designer, it becomes more than that. Designed by artist Paul Timmers, the ‘Wooden Bike’ is – as far as the eyes can see – a bicycle made of pure wood with no varnish or any other coats and definitely no paint. Closer inspection reveals components made of 3D printed aluminum and a belt drive system that doesn’t need lubrication, and the word “unbelievable” escapes from between your lips. Built of solid ash, the wood absorbs all the bumps on the road, giving you a pretty comfortable ride, which is powered by a single gear. While the bike weighs only 11 kgs, the price however is available only on request.

SPECIFICATIONS

Weight: 24.25 pounds | **Material:** Carbon fibre, Solid Ash and Aluminium | **Price:** Available on request



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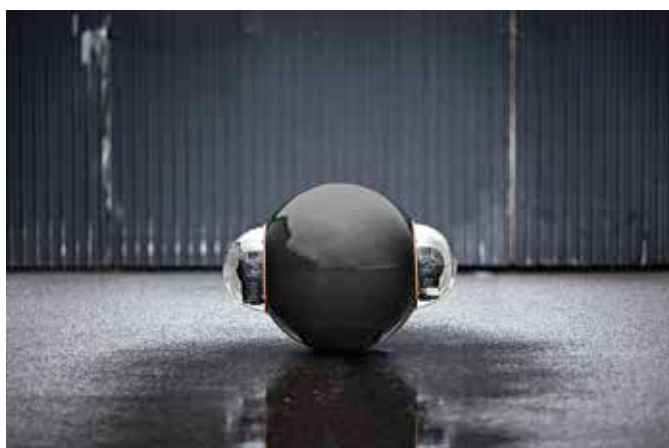


Time to be Urbane

When Motorola brought out the gorgeous Moto 360, LG not wanting to be outdone brought out the G Watch R in response. With its round display and Swiss watch like looks, some said it looked even better. Now, LG, intent on being taken seriously and possibly knock the Apple Watch out of the water has just announced its Watch Urbane. Featuring the same innards and shape as the G Watch R, the Urbane is much sleeker and even has a thinner bezel. Available in rose gold and dark silver, it looks like the epitome of luxury. Though there's no word on how much it costs or when it's going to be out, we want it so bad!

Like a drone out of water

The evolution of drones is very much like that of dinosaurs. As time progressed, some evolved and took to the skies and others moved to the water. Now, they're crawling out of the water, all guns blazing. Developed by a research team at Stamford, Connecticut, USA, the GuardBot is an amphibious drone capable of swimming across water and rolling across land and even take on steep inclines. It's powered by a motor that swings back and forth like a pendulum to shift the center of gravity. The developers of this drone say it's ready and can be scaled up to be as big as nine feet and scaled down to be as small as 10 cms. Drones, these days, seem to be spreading across the world like rats. Somebody call the (ex)terminator.



Watch movies in the wild

We've always loved the idea of taking the movies with us wherever we go. Samsung toyed with the idea and launched the Galaxy Beam. Sony followed suit and tried it with a couple of camcorders. However, neither of them had products that sounded great, and what's a movie without good sound?

To solve this exact problem, a bunch of engineers got together and developed a bluetooth speaker with a built-in projector. The Dashbon Flicks is a portable speaker with HDMI-in and Bluetooth connectivity, and easily works as your theatre under the stars. While the standard model will give you four hours of video and 28 hours of just music, the extended range battery which comes as an option gives you nearly nine hours of video and 60 hours of music. The built-in sub-woofer promises good sound quality but the 720p projector works badly in the daytime. However, inside a comfy tent it works brilliantly.



Signals that follow you everywhere

It's red, has eight antennae and looks like it's going to sink its teeth into you. We're talking about the latest range of high performance routers from D-Link: specifically AC5300, AC3200 and AC 3100. All of them support 802.11ac tri-band beamforming speeds (ranging from 3.1 Gbps to 5.3 Gbps), gigabit ethernet and enough antennas to ensure you have full signal even in the cupboard under the stairs (you're a tech wizard, Harry). While only the AC3200 is available today, the other two are expected to be released later this year.

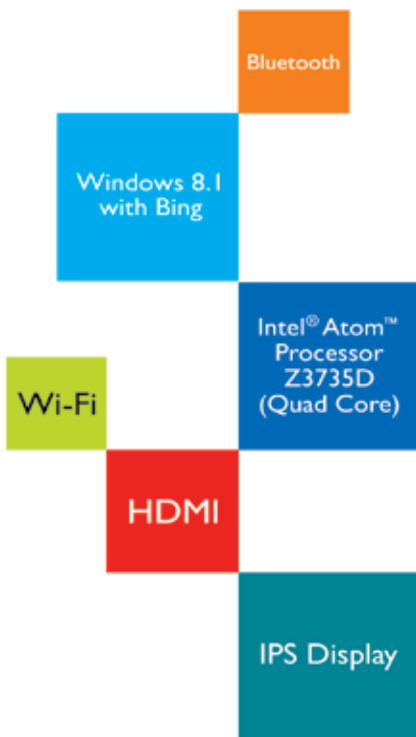
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The latest headphone amplifier on the block

We know what you're thinking: "What use is a headphone amp to me? My phone and high-quality headphones are all that I need to enjoy my music." Allow us to tell you that you couldn't be further away from the true potential of your music player-headphone combo. The only thing that can bridge the enormous gap is a headphone amp. We exaggerate the difference in sound quality, because when you plonk the FiiO E11K or the 'Kilimanjaro2', you're probably going to be thinking, "I've never heard that before. Maybe I should listen to another track... and another track...and another..." and before you know it, you're dangerously dehydrated and have just spent several hours listening to your favourite songs like you're listening to them for the first time in your life.

The Kilimanjaro2, as the name suggests, is version 2.0 of FiiO's portable headphone amplifier. It's made of metal, has a 1400 mAh battery inside, a line-in, a headphone-out, a switch to toggle gain on/off, a dial to crank it up and a switch to either give you less bass or more bass.

It's rechargeable and will last upto 16 hours. A few hours with this gadget and you won't ever want to go back to being without it.



SPECIFICATIONS

Dimensions: 91.2 x 56 x 13mm | **Battery:** 1400 mAh | **Operating time:** 16 hours | **Weight:** 92 grams | **Price:** \$60 (~₹3,700)

Scrambled on toast anyone?

Scramblers were once what motocross is today. Or to put it in a better sentence, a scrambler used to be a type of motorcycle used on off-road tracks. When Ducati introduced the Scrambler back in the 60s, it instantly became a legend. Now, over 50 years later, Ducati has brought it back and it still looks as gorgeous as it did back in the day. With the new Scrambler, Ducati hasn't tried recreating the older design. Instead, it has (or claims to have) evolved the bike into what it would have looked like today, had it not been shelved back in the 70s.

The 2015 Scrambler will be available here halfway through the year and in four variants: Icon, Classic, Full Throttle and Urban Enduro. Each has a few subtle changes in the way the bike is built and all four of them come with a slew of interchangeable parts that open up new vistas of customisation. It's powered by a 803cc L-Twin engine from the Monster 796, which sits neatly inside a new trellis frame. Power is sent to the rear wheel via a six-speed transmission and the bike gets a disc at each wheel, built by Brembo, to take care of the stopping.



The engine is said to have been de-tuned and isn't as high-strung as the Monster's – making it better suited for an urban commuter. Touted to be one of Ducati's cheaper options, the Scrambler can be soon expected to paint the town yellow.

SPECIFICATIONS

Price: ₹6-7 lakhs (expected) | **Engine:** 803cc L-Twin | **Power:** 75 bhp | **Top Speed:** 265 kmph, 0-100 kmph in 3.4 sec

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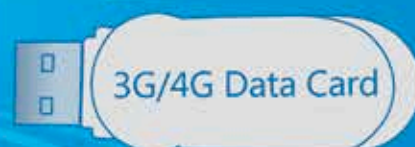
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TL-MR3020 DETAILS

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MOBILE WATCH

A lot can happen over a month in the mobile space. Here's a look at the latest mobile phones from Samsung, Motorola and Microsoft. Read on...



New Snapdragon chips announced

Qualcomm seems to be really busy this year. Recently, it announced its most high-end 64-bit chip and now it has unveiled the Snapdragon 618, 620, 415 and 425 chipsets. All four of them have a 64-bit architecture and will support 4G LTE networks. The Snapdragon 415 and 425 will fall under the Qualcomm 400 series and will feature eight cores with clock speeds of 1.4 GHz and 1.7 GHz, respectively. On the other hand, the Snapdragon 618 and 620 will come under the Qualcomm 600 range featuring 1.8 GHz clock speeds with hexa-core and octa-core CPU setups. With this new announcement, Qualcomm is finally bringing 64-bit based chips for various price segments.

Samsung updates its portfolio

Smartphone leader Samsung has introduced an array of new smartphones including the new full-metal bodied Galaxy A3, A5 and A7 and semi-metal bodied smartphones, the Galaxy E5 and E7. The adoption of metal certainly makes these smartphones attractive, but the price range just kills the deal. Samsung also said that it will be aggressively focussing on 4G-based smartphones, so it has updated the Galaxy Grand Prime, Galaxy Core Prime and the Galaxy J1 with an LTE radio.



Motorola to unleash its "beast" in India

Surprise, surprise! Flipkart recently hinted that a "Moto beast" is on its way. It will boast of accelerated performance and Ballistic Nylon Faring. This clearly points to the Moto Maxx, which was announced last year for the US and Brazilian markets. The Moto Maxx comes with some drool-worthy specs including a 5.2-inch OLED display with a resolution of 1440x2560p, a 21MP primary camera and 2MP front-facing camera, Qualcomm Snapdragon 805 SoC with 3 GB of RAM, 64 GB of storage and a large



3900mAh battery. The back panel is made of ballistic nylon, giving it a kevlar-like feel. And just to sweeten the deal, the smartphone is touted to be splash resistant. Start saving now cause this beast might just cost somewhere around 40 grand.



More affordable Lumia smartphones in the market

It seems Microsoft wants to compete with the smartphones in the low-end category as the company announced two new Windows Phone devices which don't burn a hole in your pocket. The Lumia 435 and the 532 are now the most affordable smartphones from the company, priced at ₹5,999 and ₹6,499, respectively. For that price you get a Snapdragon 200 processor, 1GB of RAM and 8GB of storage on both the devices.

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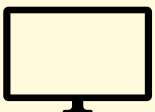
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Dorothy - After Midnight

Overdriven guitars, a tattooed hot chick wearing a ripped up Metallica t-shirt and a song that'll instantly get you on your feet. What else could you ask for? If you're still not satisfied you'll also probably revel in the fact that this song was used in The Crew (the game). <http://dgit.in/OhDorothy>



John Mayer - Ain't No Sunshine

Granted this is an old track, but you ain't seen a rendition of Ain't No Sunshine like the one performed by John Mayer at the 2010 Crossroads Guitar Festival. The



perfect example of the magic that can happen when some of the world's

most accomplished musicians come together and the mood is right. Catch Steve Jordan tearing up the skins, Pino Palladino pulling some mellow bass and John Mayer burning up a Red Gibson ES-335. <http://dgit.in/NoSunShine>

MOVIE

Whiplash

An all-round entertainer.

Jazz is almost universally agreed upon to be the true American art form. Sadly, it lives on only in the hearts of a select few who truly understand its charm. Whiplash, a movie by Damien Chazelle, is about a young musician and his start at one of the best music schools in the country, the Shaffer Conservatory in New York. Playing the drums since he was a little boy, Andrew Neiman nurtures the dreams of one day making it big in the Jazz circuits. As he practices, his life opens up before him as Terence Fletcher,



one of the greatest conductors the school has ever seen, hears him play and subsequently gives Andrew a place in his band. Based on true events, the movie introduces you to a side

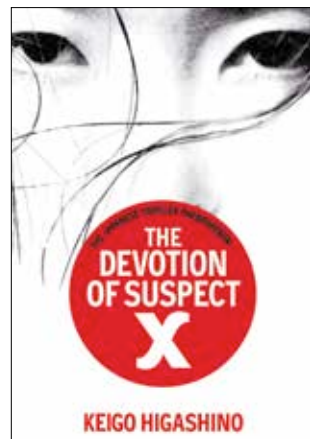
of jazz that popular media never managed to portray. The music is good, the acting is good, the story is good. No wonder the movie won three Oscars.

N Ragavan

BOOK

The Devotion of Suspect X

Come for the thrill, stay for the mystery.



The title doesn't really relate to the book when you pick it up and skim through the first few pages. But when you do, you realise that what should probably be the plot twist is revealed almost immediately. A book written by Japanese author Keigo Higashino, The Devotion of Suspect X is a story about a young-ish single mother, Yasuko Hanaoka and Tetsuya Ishigami, who

is madly in love with her. In an altercation with her ex-husband, Yasuko murders him as she tries to protect her daughter. The story seems a bit of a drag at first but it catches on later as you join in on the investigation. While revealing any more details would ruin the book, we'll say what everybody else has said so far, "You will never see the twist coming."

N Ragavan



Grasp

A shoulder mounted wearable device, Grasp gives the instructor the same POV as the student. It claims to alter the entire paradigm of classroom teaching by motivating improvement with its innovative features.



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Ever gone camping only to sorely miss the warmth of a hot tub? Ever thought that the only thing that can make a romantic night under the stars with your SO would be a hot tub? Nomad has answered your prayers with a heatable vinyl tub.



RHA T10i

Are you in pursuit of earphones that make a listening to a live concert feel natural, or in need of that extra bass when you're "droppin' dem' beats" and maybe some better treble? Well, just twist the drivers off the RHA T10i and get on with your life.

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Android for your light socket

Just this morning we were wondering what we could do with that extra unused light socket at work and here's our answer. Available on Kickstarter, Beam is an Android powered projector that can be screwed into any light socket for a full entertainment experience with built in sound.



Hot or Cold

An Indiegogo find, the TrackR Bravo is a smart tag that attaches to any item of value. If say, your dog's gone missing at the park, your smartphone can find old Fido hiding under the bench by making the tag ring or finding out whether you're getting closer or farther away from him than you should be. Quite a useful little device we must say.

TV SHOW

Better Call Saul

"Don't drink and drive. But if you do, call me."



Saul Goodman, the fast talking, lawyer from Breaking Bad was the success behind Heisenberg's reign. But before he became Saul Goodman, he was Jimmy McGill and before he turned into the ace attorney that represented the former chemistry teacher, he was a struggling lawyer representing low lifes who can't afford their own lawyer. While Breaking Bad was a TV series worth its weight in gold, Better Call Saul isn't too far behind giving you the same kind of nail-biting drama with the added intrigue of the back stories of a few familiar faces from the same universe. The first season kicks off in black and white as an aged Saul Goodman works the counter at the local Chipotle Restaurant, constantly looking over his shoulder. He comes home to relive his past days of glory as he pops in a tape and watches his old commercials. The rest, we guess will be history.

N Ragavan

Get writing!

At Digit, we always encourage writing, but it's hard to get the creative juices flowing when there isn't enough inspiration. Here are our picks of the best writing prompts from the sub-reddit, Writing Prompts.

1. You are a teenager with the ability to measure how "Dangerous" people are on a scale from 1 to 10 just by looking at them. A normal child would be a 1, while a trained man with an assault rifle might be a 7. Today, you notice the unassuming new kid at school measures a 10.
2. You travel back in time to the 1900's, you take your tablet out of your rucksack only to find that there is a WiFi hotspot nearby labelled "If you can see this, turn back."
3. A Serial killer has been monitoring his next victim's movements for months. She is a loner and the perfect target. One day she disappears and nobody notices but him.
4. A peaceful alien race is besieged by another race in the same galaxy. As their last planets fall and their home-world comes under threat they do the unthinkable. They ask for aid from the only known creatures more brutal than their foes in exchange for FTL technology. Humans accept the deal.
5. You are dog. It is your mission to faithfully guard your poor, stupid, two-legged pack-mates from the horrors of the mailman, the dog next door, and men with hats. Describe your vigil.
6. During a flight you accidentally damage a window and find out that they aren't actually windows, but monitors.
7. You are 90 per cent certain your waiter is Hitler.

These are our seven handpicked prompts. Let's see what you can do with them. For more, check out [reddit.com/r/writingprompts](https://www.reddit.com/r/writingprompts).



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Geek life

We take a look at some of the most beautiful data visualisations ever.



Interesting wristband

A new wristband christened the Moff bracelet transforms any object into a sound-emitting toy
<http://dgit.in/MoffToy>



Swarovski Shine

When the world of fitness gadgets meets lifestyle and fashion, you get something like this. It's no girly accessory, not by a long shot. A bracelet it may be, but one that's crafted from aircraft-grade aluminium and packed with sensors, not to mention Swarovski crystals. Waterproof, the 'Shine' tells you the distance you walked, steps you took and calorie count to relay data onto a companion iOS, Android or Windows Phone device. While there's a version that comes with built-in rechargeable batteries, another SKU has solar cells fitted in to save you a lot of trouble. These savvy fitness bracelets are priced from \$69 (₹4,295) all the way up to \$250 (₹15,566). There's something for everyone.

It's a bird, it's a bulb... It's more than just a bracelet!



Bionic Bird

A drone that almost actually flies around like a mechanical bird. For €100 (₹7,046), you can preorder this artificial, smartphone-controlled bird to terrorise or tease your pets with. The brainchild of a French inventor, this metal bird sits on a white egg-shaped portable charger, which charges the avian drone within a few minutes. 'Bionic Bird' is only 8.5 grams, comes with 0.8W motor and the ability to fly as high as 100 yards and up to 100 metres. It's controlled by an iOS app and paired via Bluetooth 4.0. This is a great toy for anyone who doesn't want just another regular-looking quadcopter or drone.

Forget pets, with Bionic Bird, we bet you could even mess with your neighborhood birds and scare them flappless.



Drones FTW!

See how drones are being used for mapping areas and protecting endangered species: <http://dgit.in/DronesFTW>



Moggles

This portable Virtual Reality headset made for smartphones also comes with a game controller <http://dgit.in/MogglesVR>

Drool maal

Snap

This isn't just a multifunctional light bulb, but a true jack of many trades. The 'Snap' from Sengled packs in a microphone and speaker to monitor and secure your home's perimeter. It also has a built-in webcam and motion sensor. Powered by a 25,000-hours lasting LED lamp, the \$170 (₹10,591) Snap is capable of recording HD 720p 30fps videos.

It can also act as a Wi-Fi repeater to extend your home wireless network's signal. Needless to say, it can take snaps and record footage of people at the door, recognising familiar faces through in-built face detection software. Pretty neat, huh?



Phaz Music P2

Apart from being a trendy, stylish-looking headphone, the 'P2' from Phaz Music is loaded with an in-built power bank, just in case your smartphone or tablet's battery starts to bail on your music listening sessions. The headphone's 1,200 mAh battery delivers power to a compatible device through a micro-USB cable. Apart from 40mm neodymium magnet drivers and 15dB bass boost, the P2s also come with a 3.5mm audio out port to daisy chain another headphone – making sharing what you're listening to with a friend that much more convenient. The headphones are available for pre-order right now for \$249 (₹16,133).

Dart

It calls itself the world's smallest laptop charger that's actually functional for use, and we don't doubt that claim. Built and designed by FINSix, an MIT startup, the 'Dart' houses patented technology that makes it up to four times smaller and six times lighter than a conventional 65W laptop charger. It's literally as small as a smartphone charger. What's even more drool worthy is the fact that Dart can charge not only a laptop but also smartphones and tablets, thereby making it truly one charger to rule them all. Perfect for mobile nirvana! It's available for preorder now for \$89 (₹5,543) and expected to ship within a couple of months.





The law may hold

According to reports, Intel thinks that the Moore's law will continue holding true even beyond 10nm chips. http://dgit.in/More_Moore

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Data that dazzles

Although we do our best to make this magazine captivating to our audience, its medium isn't without its limitations. Sometimes words just aren't enough to capture someone's imagination. After all, humans are visual animals, stimulated more by something we see than by reading its description. And in these four pages, we try to capture interesting stats and data points that will dazzle you with appealing stats. Charts, interactive infographics, or any other visual representation technique, the art of presenting mind-bending amounts of data that's readily apparent is beautiful. See it for yourself.

Jayesh Shinde
jayesh.shinde@9dot9.in



SmartEyeglass now available

The developer edition of the Google Glass rival from Sony is now available for purchase at ₹60,000 <http://dgit.in/SmartEyeG>



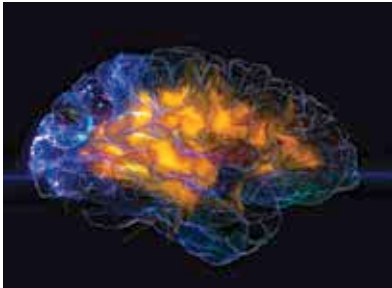
Skylake delayed

According to rumours, Intel has delayed the launch of its 14nm Skylake CPU series to the second quarter. <http://dgit.in/IntSkylake>

Geek life

1 Inside the brain

This is the kind of stuff you'd expect to see in a neuroscientist's house party. Developed by University of California, San Francisco's researchers, Glassbrain is an app that tracks a brain's activity through a cap fitted to a subject's skull and displays it in the form of the image above. This particular image is from 2012, when Mickey Hart, former



drummer for the Grateful Dead, decided to show how his brain reacts to music. After tracking the neural activity, the Glassbrain app displayed the flow in real time on a 3-D image built from brain scans taken earlier.

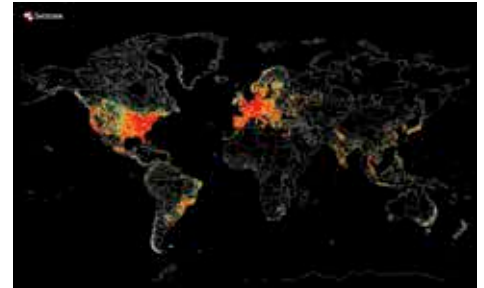
This app is still not in

widespread use, but it sure does hold the possibility to allow neurosurgeons a window to "fly inside" a functional brain and better plan a patient's brain condition, even an upcoming surgery, if need be. Take a glimpse inside: <http://dgit.in/1zdhYgy>

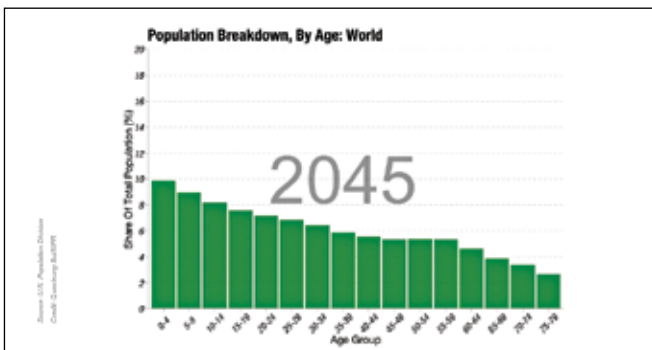
2 Pinging all public IP addresses

If you were to ping every publicly visible device on the Internet, the resulting pings would register themselves across the world in the visible hotspot – where red signifies the most densely packed cluster of devices, and blue the least densely populated spots on the Interweb. No surprises in guessing that Europe and North

America make up for the most devices connected online. This hotspot also lets us know that China isn't that far ahead of India in terms of connected



devices (at least in the public domain). Well, that's interesting. Alternatively, also check the map of the network of undersea cables that helps us connect to the Internet all around the world – <http://dgit.in/18i6bZ8>. This needs to be seen to be believed.

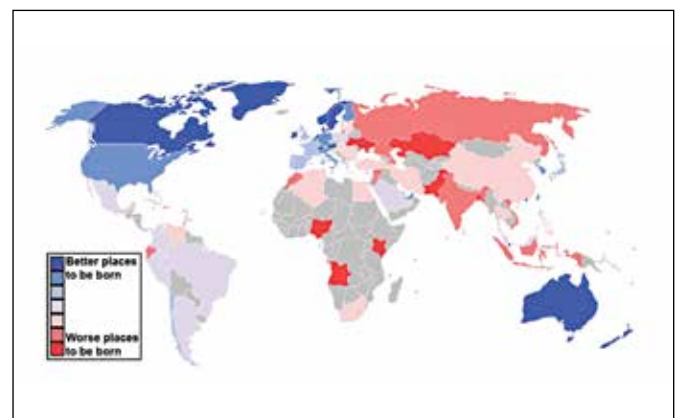


3 How the world's aging

We've all heard that more than fifty percent of India's population is below the age of 35 right now, and that we've probably the largest employable workforce in the world. China, too, for that matter. But how does the developed world compare to the developing world in terms of its aging population? This NPR blog tries to throw some light on this fascinating question by giving you a bit of historical data peppered with predictive analysis to see a dynamic chart of the world's population. The developed world, of course, has most of its population over the age of 35. Japan, for instance, has the highest percentage of old people among any other country in the world. The US is not too far behind. Nigeria on the other hand, a developing African country, has most of its population under the age of 30. Take a look at how the world's aging in detail by clicking on the following link: <http://dgit.in/18kMgc0>

4 40 maps that explain the world

Our world is a diverse place and maps can be a remarkably powerful tool for anyone to understand how the world and all its moving parts function in one seamless motion. So if you wanted to make sense of it all, we have just the thing to get you started. The image alongside is just a snapshot that tells you which are the best and worst places to be born in this world. But that's not all. There's a lot of other insightful data that's been presented in a easy-to-understand, intuitive format. Stuff like where in the world are people more or less welcoming to foreigners, where in the world are people more or less emotional, and more. It's all in there, so just go on and hit the link: <http://dgit.in/wwsep234>



The Cloud gaming headset has seen an upgrade in the form of Kingston's recently launched Hyper-X Cloud II. http://dgit.in/H_Cloud2



In a bid to improve its footing in the market, Biostar unveiled its new Gaming Z97X motherboard series with USB 3.1 <http://dgkit.in/BioZ97>



We all know Apple is the most profitable company in the world, also the largest with the biggest market cap. Google's not too far behind. And the likes of Facebook, Microsoft, Amazon, HP and other big tech stocks are minting so much money that it will boggle your mind. We've all heard the story of how Bill Gates never stops to pick up a penny he dropped (because in that time alone he earns several thousand dollars), but how do we quantify all of these intangible numbers? Here's your chance to see how quickly tech giants build wealth by comparing how much revenue and profit they earn with each passing second. Behold, on a combined revenue of hundreds of millions of dollars get chalked up in just a few minutes: <http://dg.it.in/1aelIK3>

6 One never really fully understands the importance of a single second. A span of time so small yet enough to achieve so many events. Especially on the Internet. Did you know that every second on

Reddit just over 200 v
are uploaded on Instag
second, Tumblr sees
over 80,000 posts,
Skype witnesses
over 100,000 calls,
Twitter increases
by 400,000 tweets,
Dropbox has over 1.1
million files added
onto its servers, and
the amount of Google
searches, YouTube
video views, Facebook
likes, and emails sent
will make your jaw
drop in wonder. And
all of this happens
in one second on the
Web. Truly amazing,
something that needs
to be seen by all:

<http://dgit.in/1B090Cg>

[illegible]

It's interesting to see how relationships evolve over time, and hats off to one enterprising lady who decided to track this trend by keeping tabs on the nature of SMSes exchanged between her and her partner through a six-year period – the same time in which they went from “dating” to “married”. Some serious big data analytics that, don't you agree?

50 | Digit | March 2015 | www.digit.in



300 series incoming

If reports are to be believed, AMD will soon be taking the wraps off its 300 series of graphics cards. <http://dgit.in/AMD300>



So much detail

Developing a pair of premium Fostex TH900 headphones takes a lot of attention to detail. Check out this video to know more: <http://dgit.in/AttFos>

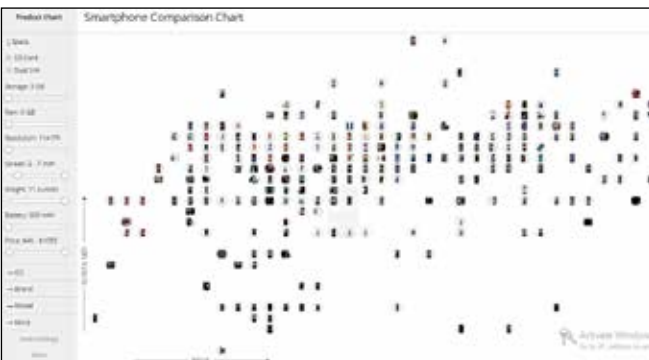
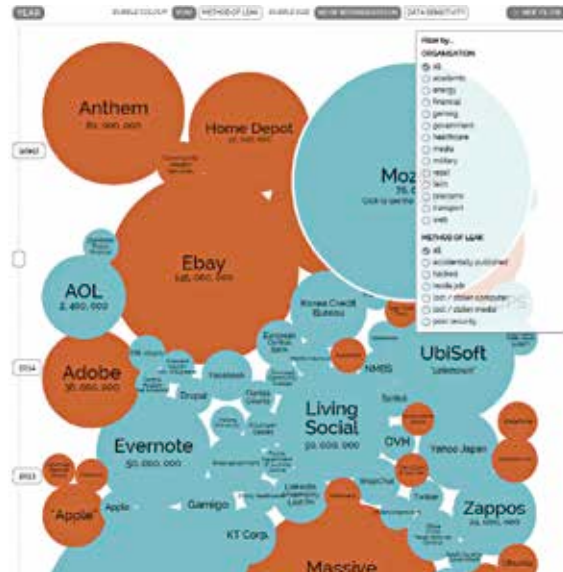
Geek life

8

World's biggest cyber breaches

We all know the popular adage – knowledge is power. Well, in the Internet Era, it can be slightly modified to ‘data is power’. As more and more of our private data is ending up on the servers of corporations who don’t take enough safety measures to secure it, cyber attacks grow in numbers. Just take a look at some of the biggest, baddest, most sophisticated cyber attacks and the industries they were targeted towards, and you’ll start to see a disturbing trend emerge. And the biggest problem with these persistent data breaches is that the damage they cause doesn’t only affect the company and the user whose data is being compromised, but different links in the value chain (banks – if money’s stolen, governments – if social security is compromised, etc.).

Here’s an interactive data visual that tries to give you just how big the world’s biggest cyber breaches have been over the years. It also lets you analyse industry-specific attacks: <http://dgit.in/1DP2uH7>



9

Interactive smartphone comparison

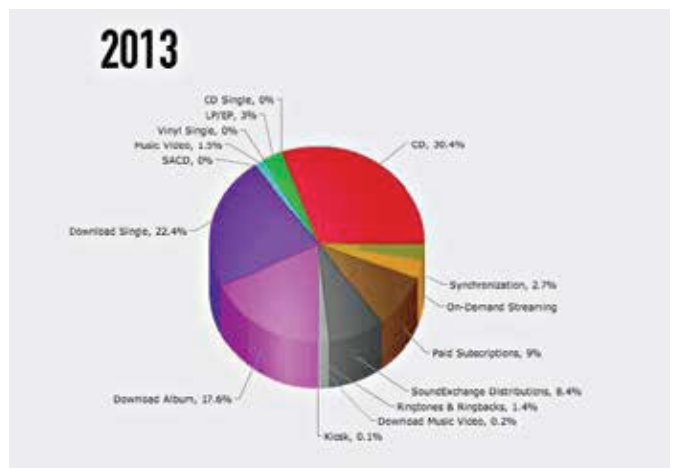
We all know that buying a smartphone is an insanely difficult process, whether it’s for yourself or for a loved one. A thousand permutation and combinations to take into account – how big is the screen of the phone? Does it have 16GB storage at least? Is it stock Android? Does it have at least a 2000 mAh battery? Is it under ₹15,000? We all remember doing at least one or more of this drill. Well, here’s a simple interactive website that tries to make the process insanely easy. So what if it’s only restricted to smartphones available in the US? You can always ask that US relative of yours to dispatch one of these off to you, if looking at the data itself isn’t enough.

The snapshot of the web page that helps you compare phones dynamically on the fly may look like a braille sample, but trust us it’s not. It’s a clever little service that will guide you along when it comes to picking a smartphone. Just hit the link alongside to see what we mean: <http://dgit.in/1w8wOod>

10

The evolution of music

Music makes the world go round. Or so a popular jazz number of old goes. But from your parent’s and grandparent’s day and age to now, can you even start to explain the changing scene of the music industry? Or how its consumption methodology has changed across generations? We found a link to a nice data visualization animation that tracks the changing music media from 1983 to 2013, a span of 30 years. And what an eventful time it truly has been! We all know that Steve Jobs revolutionized the music industry by launching the iPod and iTunes in the mid-2000s. It rang the death knell of CD-based music consumption method. And that CD destroyed tapes, and tapes had destroyed vinyls. All in a span of 30 years. Mind boggled yet? Go here then and see it for yourself: <http://dgit.in/1w0NnCu>



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worldview

OUR PICK OF THE BEST TECH ARTICLES FROM AROUND THE GLOBE

(MUST READS)



DEVICES ARE SPYING ON YOU

What if we told you that modern-day consumer electronics manufacturers can potentially eavesdrop? Looks like devices from Samsung, LG, Amazon, Microsoft, GM, Chevrolet, Google and others are hanging onto your every word.

<http://dgit.in/1vlpwUq>

PHOTOSHOP TURNS 25

Adobe's most widely used software, a tool that graphic designers and artists can't live without, Photoshop just turned 25 years old. Here's a look at its brief history and how it's planning to attack the future.

<http://dgit.in/1Bvm2j4>

SEND A MESSAGE TO SPACE

Here's your chance to send something off into deep space. After New Horizon's Pluto flyby, NASA will upload one final message from earth onto it. And the US space agency is inviting everyone to join in on the selection process.

<http://dgit.in/19KCcJH>

CAPTURING REAL 3D AUDIO

Recreating a virtual soundstage that matches the real one is a difficult task. But researchers at Princeton's 3D Audio and Applied Acoustics lab are working on it by trying to do just that.

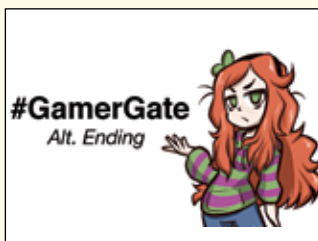
<http://dgit.in/1vPoGJf>

[Vice Corner]

VOYAGE MARS: ONE MAN'S QUEST TO REACH THE PROMISED LAND



A 28-year-old Californian is psyched for being shortlisted as one of the Mars One mission finalists. Despite an MIT study claiming the mission is doomed to fail, it's not shaking Andrew Tunk's commitment to the cause. <http://dgit.in/1ARa9Ey>



Beyond Gamergate

The gaming press' dark underbelly was uncovered last year, and a lot of damage was done as a result. But how best to move forward, regain lost trust of readers and gamers, and ensure this sad episode never repeats itself?

<http://dgit.in/1MErrHP>



Online dating can be bad for your ego

How can complex human personalities be explained through a picture and few random lines describing yourself? The world of online dating can make you look bad and feel shallow. Learn from this lady's life experience.

<http://dgit.in/1ArAUvZ>



Inside a bitcoin mine in China

Mining the web's popular virtual currency, Bitcoin, is a resource-intensive task. Here's an exclusive behind-the-scenes look at a Bitcoin mine in China that's churning out US \$1.5 million a month. Wait till you learn about their electricity bill.

<http://dgit.in/1vO9lc2>

**FB'S PURCHASE OF
WHATSAPP VISIONARY**

A year ago, when Facebook dished out a whopping \$19 Billion to purchase WhatsApp, the world at large, not just the tech community, went into a tizzy. But it was a masterstroke from FB, money well spent. Read this analysis: <http://dgit.in/188c1Mq>

**SOURCE OF THE NEXT
HACK IS YOU**

In an increasingly interconnected world, where devices make rampant, unsupervised connections, mayhem can't be too far away. But what if one of your trusted hardware turns on you? What gives? <http://dgit.in/1vPudzq>

**STUCK IN KICKSTARTER
HELL**

Crowdfunding kingpin, Kickstarter has had massively successful game-funding projects. But for every success, there are several key failures. There are plenty of games that took people's money but never quite delivered. <http://dgit.in/1vPvA12>

**FIRST TIME YOU EVER
USED A COMPUTER**

It's like remembering first love. No one can ever forget their first time on a computer. Often, it's a happy, well cherished memory. This article's something like that. But read the comments to see the really interesting memories. <http://dgit.in/1vPxLBO>

The most loved Cricket video games of all-time

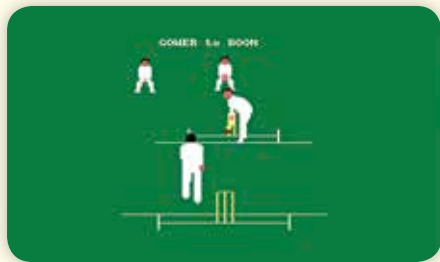
Cricket fever has gripped the nation. It's the right time to try old classics

– By Nikhil Pradhan

With the Cricket World Cup in full swing, it's a pretty good time to look at the best Cricket themed video games that kept us entertained when we were kids and continue to do so today. Here are the 12 best Cricket video games of all time.

Graham Gooch's Test Cricket (1985)

Released for the Commodore 64 in 1985, Graham Gooch's Cricket is the granddaddy of all Cricket games. Unlike later games,



this one lets you choose from playing it as a simulation or an arcade title. Apart from letting you play Test matches, it also lets you choose the 60 over One Day International, that has since gone extinct. Although the game's graphics look rudimentary today, they were actually praised in '85.

Graham Gooch's World Class Cricket (1993)

You probably remember this game as Allan Border Cricket or Brian Lara Cricket and it was further launched as Jonty Rhodes II, Battle for the Ashes and, later, Shane



Warne '97 for the Commodore Amiga, DOS and Atari ST. The game has memorable, colourful graphics and fun gameplay. The game is now considered as abandonware and can be downloaded for free here: <http://dgit.in/alnbrcrie> (you'll need DOS-Box to play it though).

Super International Cricket (1994)

One of the rare Cricket games published by Nintendo, Super International Cricket was released for the SNES in 1994. The game took an almost top-down view of the pitch unlike most Cricket games that mirror the standard broadcast camera angle. Even today, the game's retro graphics look very good and the gameplay is one of the fastest seen in a videogame based on Cricket.

**Cricket 97 (1997)**

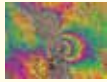
Even though Cricket 96 was EA's first Cricket game, Cricket 97 was responsible for properly kickstarting EA's attempt at making its Cricket games an annual franchise just like its FIFA, Madden and NBA games. This was the first Cricket game to feature fully rendered 3D graphics and also included commentary and FMVs of the wonderful Richie Benaud saying things like "When in doubt, go for spin," and "Oh, he gave that one some Larry Dooley." It was launched for DOS and Windows.

**Brian Lara Cricket '99 (1998)**

By far the most popular game on this list, BLC '99 is still remembered fondly by many gamers who played it first on their Windows 95 PCs (it was also launched for the original Playstation). BLC '99 featured great gameplay, solid A.I. and a packed roster of real players from around the world. No wonder, BLC '99 remains the best reviewed Cricket videogame of all time.

Cricket 2005 (2005)

EA Sports' Cricket games were never considered to have the best gameplay and by

NEW-AGE EARTHQUAKE MONITORING

The European Space Agency launched Sentinel-1A

spacecraft little over a year ago. What it has led to is ushering in a revolutionary new era of space-based fault monitoring system of earthquake prone zones for better future predictions.

<http://dgit.in/1FDUdGN>

MICROSOFT, GOOGLE SWAP ROLES

Since a year or so, Microsoft and Google have increasingly stepped on each other's territories, even rubbing each other the wrong way. This article talks about how Microsoft is behaving a lot like Google, and vice versa.

<http://dgit.in/1AUOWJH>

SMARTPHONES FTW!

Remember the naysayers claiming smartphones are taking us closer to a nervous breakdown? Making us restless, anxious and induce stress? None of that was true, according to recent studies. Smartphones make you smart.

<http://dgit.in/1w6s6ND>

DATACENTERS POWERED BY FUEL-CELL

As we all know, datacenters have limitless power requirements, and any innovation that conserves or optimizes power generation, delivery and consumption is a major breakthrough. Enter fuel-cell. A revolution beckons.

<http://dgit.in/1AdvqGc>



2005, it was evident that the game publisher didn't have its heart in publishing Cricket games. However, Cricket 2005, launched for PC, Xbox and the PS2, did do some things well, including really good graphics, and gameplay that was suited to both, a controller and a keyboard.

Cricket 07 (2006)

The final Cricket video game from EA Sports, Cricket 07 represented both the worst and the best aspects of EA's franchise. On one hand, the game was riddled with bugs and inconsistent A.I. On the other hand, the game had a huge variety of gameplay modes, an Ashes campaign that included objectives, videos, statistics and players from previous Ashes tournaments and impressive commentary.

Brian Lara International Cricket 2007 (2007)

By the time this game was released for PC, Xbox 360 and the PS2, Codemasters had kicked out EA and taken the mantle of the

publisher of the best Cricket video games. The game, launched in India as Yuvraj Singh International Cricket 2007 and in Australia as Ricky Ponting International Cricket 2007, was praised for being the most realistic version of the sport to be seen in a game and for a wide variety of game modes.

Ashes Cricket 2009 (2009)

Codemasters' Ashes Cricket 2009 is the one of the better reviewed Cricket video games. Although it was not the best looking game, it introduced intuitive controls and two player co-op gameplay. It also had multiple stadiums and game modes. Unfortunately, it was also heavily pirated on the PC which led to Codemasters not launching its sequel, International Cricket 2010, for computers.

International Cricket Captain 2013 (2013)

While the EA Sports and Codemasters Cricket games targeted gamers looking for graphics and arcade-y gameplay, the International Cricket Captain series has consistently only been for simulation fans. Like the Football Manager series, ICC has been going on for a while and ICC 2013 was the 16th game in the series. If you're a fan of planning out matches, line-ups and strategy, rather than controlling the actual match, then ICC 2013, launched

for Windows and Mac OS, should whet your appetite.

Don Bradman Cricket 14 (2014)

The latest Cricket game to hit stores comes from Big Ant studios and Tru Blue entertainment, and is a worthwhile addition to your library. DBC 14, launched for the Xbox 360, PS3 and the PC, attempts to rework the controls to make playing virtual cricket more intuitive but also challenging. DBC 14 has received good reviews, making it the second best reviewed Cricket game after Brain Lara Cricket '99, and it's very clear that the game was made by folks who actually understand



and love the sport. It recently released on next gen consoles with improved graphics. Be sure to see our review of the game in the current issue of SKOAR!

Real Cricket '14 (2014)

For Cricket lovers who want a game that they can quickly pick up and play, Real Cricket '14 is a great option. It was surprising to find a mobile Cricket game (available for free on Android and iOS), that was actually fun to play. The game, with its hand-painted 2D graphics, looks very good and thanks to its developers, it also receives plenty of updates. Unfortunately, as with most free to play mobile games, this one also has plenty of in-app purchases and advertisements to spoil the fun. **4**



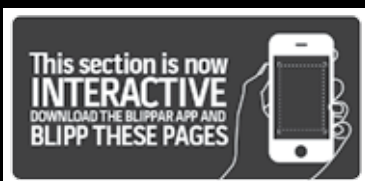
8-BIT CINEMA

No learning here, just pure entertainment value. Your favorite movies retold as old school NES/SNES/arcade



games. That's the USP of this YouTube channel's extensive playlist. Just hit the link and see it for yourself.

<http://dgit.in/8bitCinema>



For a list of all the links from this section, head over to <http://dgit.in/WWM2015>

(PRODUCT LAUNCHES)

NIKON D810A



This camera is specially designed to take pictures of nebulae, constellations and all your other cosmic beauties. How does it do that? The infrared cut filter on the camera has been tweaked to better capture the hydrogen alpha spectral wavelength. Price: around \$3000

DELL VENUE 10



Running Android 5.0, Lollipop, the Dell Venue tablet comes with a detachable keyboard, will feature a 10.1 inch HD or Full HD display that can be locked to five different positions. Pricing is currently unknown. Price: \$379.99 for the pro variant with Windows 8

AUDIO-TECHNICA ATH-M70X



This a headphone we're eagerly awaiting. Featuring 45mm drivers, 90-degree swivelling ear cups for easy, one-ear monitoring, and a frequency range of 5 - 40,000 Hz, this might just be the go-to studio monitoring headphone of the near future. Price: \$419

PICTURE PUZZLE



ABSOLUTE
TIMEPASS

UNJUMBLE
ON YOUR MOBILE



DOWNLOAD BLIPPAR APP ► FILL SCREEN WITH IMAGE ► BLIPP IMAGE INTO LIFE!

Top 3 YouTube Picks

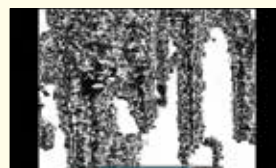
Make sure your boss doesn't catch you goofing off with one of these videos playing on your screen



Robot Nom Nom

Duration: 0 min 30 seconds

Want to watch a human do a robot? It's not what you think you pervers. Watch this and be truly amazed. <http://dgit.in/bstrbteva>



What is lost to .mp3?

Duration: 2 min 33 seconds

The above picture isn't a misprint. The video was created by salvaging the sounds and images lost to compression. <http://dgit.in/mp3lss>



Photoshop dreams

Duration: 1 min 7 seconds

Here, artists from all over the world contributed their most amazing creations to celebrate 25 years of Photoshop. <http://dgit.in/25yrsPS>



Reportedly the Linux Kernel is switching To Linux v4.0, and coming with many new addons: <http://dgit.in/1Do2V8G>

Constraint Programming

>>When you think of constraints, the general feeling behind them is negative. Hopefully after reading this, you will think differently!> by Kshitij Sobti

Sh erlock Holmes is often quoted as having said: “when you have eliminated the impossible, whatever remains, however improbable must be the truth.” It is this sentiment that most accurately conveys what constraint programming is all about.

It is not uncommon that the solution to a problem comes from a slow exploration of all possible answers, till we reach a tighter and tighter bound for what it could be, and finally arrive at a solution.

Constraints lead to solutions?

Look at Sudoku, we're sure you are familiar with the popular number-based puzzle that adorns at least one corner of every newspaper in existence. If not, we'd love to buy the rock you've been living under, it seems like it might weather a nuclear explosion. If you seriously are not familiar with Sudoku, we'd advise you look it up before reading any further.

The general approach to Sudoku is to look for constraints. You'll tend to look at blank spots that are surrounded by many numbers, or have many numbers in the same row or column. You do this because those are the locations that are the most constrained and they have

the fewest possible options for numbers. You keep looking till you find a spot that can contain only one possible number, and you lock it down. With this new number in place, you suddenly have more constraints. You have new constraints for spaces in the same row, column or block. We now scan the puzzle again, looking for new spots that can now hold only one possible number. Harder Sudoku puzzles can take this a notch deeper by making you analyse a combination of constraints on multiple cells that give you a solution.

When you begin to think about it, there are many problems, and puzzles that work exactly the same way. Constraint programming is a concept that is designed to solve exactly such problems.

So what exactly is constraint programming?

To have something to contrast constraint programming with, let's look at the immensely popular imperative programming. Imperative programming is the kind of programming commonly employed to create software written in C, Java, JavaScript, Python, Ruby etc. Most languages you might have encountered are imperative programming languages, or at least primarily support imperative

*coding matters



*io.js:

>>If you're a Node.js developer, get familiar with io.js. Where Node.js development seems to have stalled, io.js continues the project under a new name and a new open governance model.

<http://dgit.in/ioNodejs>



*Aurelia:

>>Welcome another JavaScript framework for building web applications for the world. Aurelia is a new modern, modular, self-contained web app framework that is built using latest (even unreleased) JavaScript features.

<http://dgit.in/NewAurelia>



*.Net open source

>>You've probably heard that Microsoft has made their .NET framework open source, and aim to support Linux and OSX for the same. You can now see the beginnings of this support by visiting their repositories.

<http://dgit.in/dotnotGit>

programming. In imperative programming you give the computer a series of instructions which it then performs in an order.

You might wonder, what is the alternative to telling the computer what to do? How will it do anything if you don't give it a series of steps? One alternative is something called declarative programming. In declarative programming, you don't tell the computer what to do, but what it is that you want from the computer. It then figures out how to accomplish that.

A good example of this is HTML. In HTML you do not tell a computer how to draw a title or a paragraph, you merely tell the computer what you want, and it handles the rest. If this seems a little weak to you, SQL is another example. SQL code does not focus on how to get data out of a database, instead it just describes the data you want, and the computer figures out how to fetch that data. Again, if you aren't familiar with it, you will have to look it up to understand better.

Constraint programming then is a form of declarative programming in which you simply give the computer a set of variables, provide a set of constraints that apply to those variables and from that it derives a solution.

Now this might sound absolutely magical. No algorithms, no messing with functions and classes and all that. Well, you're right that it's magical, but it's not as simple as you might think. In constraint programming, the most difficult thing is simply trying to convert a problem into a set of variables and constraints. Often you need to think quite deeply to derive constraints that might not appear at first glance.

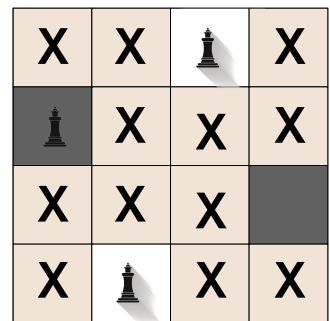
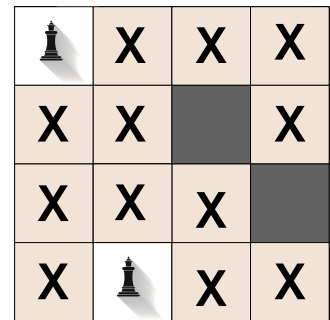
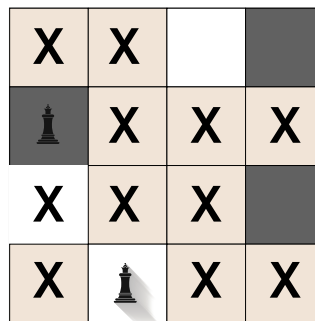
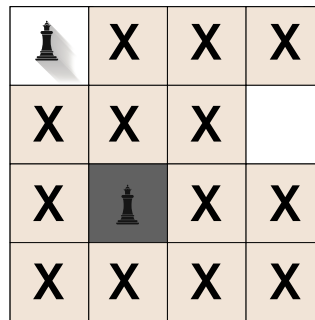
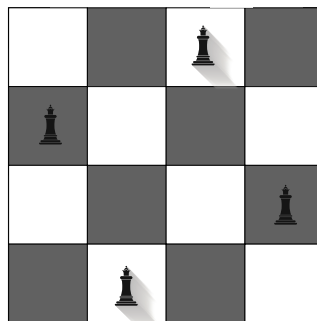
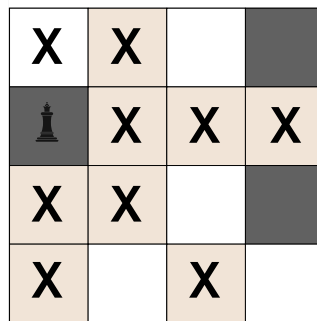
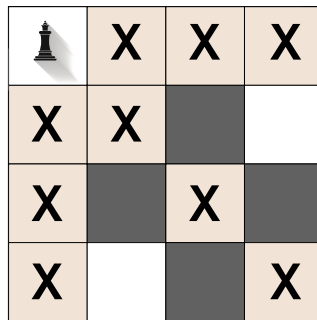
Also, constraint programming does not make a computer magically understand your natural language. It has its own syntax and conventions that differ between different programming languages and constraint programming libraries. You need to work within the constraints – see what we did there – of constraint programming systems.

It will all become clearer when we look at a few popular examples of problems that can be easily solved with constraint programming.

Example problems:

We've already mentioned Sudoku above as a good example of constraint programming, now let's look at another – decidedly academic problem called “SEND + MORE = MONEY”.

Here is how this puzzle goes. The alphabets in “SEND”, “MORE”, and “MONEY” are representations of numerical digits. So if “S” is 8, “E” is 4, “N” is 1 and “D” is 7, then “SEND” stands for the number



The n-Queens problem described in the “Solving a Constraint Program by Hand” section, is a lot tougher than it looks when you get to a larger number of queens (with a much larger grid). If you simply start placing queens randomly, you will find more often than not that you need to backtrack and try again.

The 4 queens problem illustrated on the left here shows the n-Queens problem in action with a simple version of the problem that can be solved by hand.

8417. What you need to do, is to find what each letter stands for, such that the equation “SEND + MORE = MONEY” holds true. Obviously, here a letter cannot stand for a number like 11, since it represents a digit. Another constraint is that, all alphabets stand for different digits.

If you were to look at an imperative solution for this, honestly saying, it wouldn't be hard. There are only eight distinct letters, and 10 possible values, which leads to just a few million combinations. A modern computer can chew through that pretty quickly. However such a solution would not be applicable to the next problem we discuss, and you would need to develop a solution from scratch.

Now let's see a constraint programming solution develop in this problem. First of all, we have eight variables (S, E, N, D, M, O, R, Y). The first constraint is that each letter stands for a number between 0 and 9; this is often called the domain of the variable. The second constraint is that each letter is different; there is usually a very easy way to declare this in a constraint programming environment. The final constraint is that equation declared above.

Is this all though? Another constraint that might not be apparent is that “S” and “M” can't be 0, because valid numbers can't start with a zero. Dig a bit deeper and immediately you will see that “M” is the carry from the sum of “S”, and “M”. The largest value a carry can have in this case is 1. So the maximum value of “M” is 1, which means that the value of “M” is 1 since it can't be 0. This also eliminates 1 as a solution to any other digit.

Let's look at what a solution to this problem would look like in a constraint programming language. The language we are using here is called MiniZinc, and it is in fact one of the sample codes that

ships with their software. First, we would need to declare the variables. To save space, we'll just show one example:

```
var 1..9: S;
```

Here 1..9 specifies the range of values S can take. Next, we define the constraint that all values must be different:

```
constraint alldifferent([S,E,N,D,M,O,R,Y]);
```

Finally, the biggest constraint we have is of the equation that must be satisfied. We can represent that as:

```
constraint 1000 * S + 100 * E + 10 * N + D
+ 1000 * M + 100 * O + 10 * R + E
= 10000 * M + 1000 * O + 100 * N + 10 * E + Y;
```

After this, all we have to do is instruct the program to solve the constraints as specified. This is accomplished with a simple statement:

```
solve satisfy;
```

That solves the problem for us. This was a rather simple problem that you can solve by hand. So let's look at something a lot tougher. This one is called the n-Queens problem. It requires one to place n queens on an n-by-n chess board such that no queen can attack any other queen. If this sounds a little confusing, don't worry, we will look at this problem in detail.

Solving a Constraint Program by Hand:

In chess, the queen has the widest range of motion. It can move any number of spaces horizontally, vertically, and diagonally in any direction. So placing them such that no queen can attack any other one requires quite a bit of strategy. Given this problem, we need to figure out what should be the variables, and what should be the constraints.

Before we dive into solving this using a computer, let's take a simple version of this problem and see how one could solve it by hand. We'll look at a 4×4 problem since there is no solution possible for 2×2 and 3×3 boards — think about it and you'll see why.

First of all, we can immediately see a constraint. No two queens can be on the same row, or the same column. So we'll take our 4 queens, and assign each its own column. Now we just need to figure out which row each should be on.

Let's start by putting the first queen in the first possible location, the top-left corner. This eliminates all spaces on the same row, column and diagonal. For the second queen, we have two options on the second column so let's put it in the first one for now and move on. The second we do this, we realise that this won't work. We have eliminated all spaces in the third column.

At this point, we need to backtrack. We now know that if the first queen is where it is, the second one can't be in this location. Let's move

*pointers

>>Interesting developer videos



*Discrete Optimization at Coursera

>>Coursera's discrete optimization course has a module dedicated to constraint programming among other interesting topics.

<http://dgit.in/CourOptim>



*Intro to Constraint Programming

>>This two-part video series titled "An Introduction to Constraint Programming and Combinatorial Optimisation" does just what it says.

<http://dgit.in/ConstraintPrg>



*Prolog Programming

>>This video series introduces you to Prolog, a logic programming language that supports constraint programming natively.

<http://dgit.in/PrologProg>



*Java Cream Sample App

>>Cream is a constraint programming library for Java. This short video should help you get started programming with it.

<http://dgit.in/JAVACream>



it to the next possible location at row 4. And, let's stop right here. We can see two free spaces, and both are diagonal to each other. This will never work. What have we gotten ourselves into? Right?!

We have eliminated both possible locations for the second queen, from this we can conclude that the first queen is misplaced. At this point, we need to go back two steps, and move the first queen to another location, the second row.

On doing this, we immediately see that there is only one spot in the second column, so let's place one there as well. This in turn leaves only one spot for the third queen in the first row. This now leaves one space for our final queen. And so ladies and gentlemen, we finally have a solution.

Now let's do this for 10 queens. Just kidding! Let's look at a possible constraint programming solution that works for any number of queens. The program we will build below can give you a solution for as many as 30 queens in under a second.

Building a Constraint Program:

At first glance, you might think that each queen will need two variables, a row, and a column. Certainly it is possible to develop a solution that way. We have already discovered above though, that each queen will be in a different column. So why not just assign one to each? Queen 1 in column 1, and so on. We can even use an array for this where the index can be the column number and the row can be the value of the array at that index.

The first constraint we can place now is that all the queens are in different rows. We have done this before when we wanted all letters in the "SEND+MORE=MONEY" problem to be distinct, we use the alldifferent command.

Next comes the tricky part, how do we convey that no two queens should be along the same diagonal? A few smart people have discovered the trick to this, and it is quite clever when you see how it works.

The solution is to use two constraints, the first constraint is that no two queens can have the value of row number + column number the same; and the second constraint is that no two queens can have their row number - column number of the same value.

This might seem counter-intuitive to you, so we have attached an illustration that shows a 4×4 matrix where each cell has the sum row + column number in it; and another matrix that shows the difference row - column number. You'll see that two cells having the same value corresponds to them being along the same diagonal.

Here is the final code from the MiniZinc sample set with comments and the output procedure removed for brevity:

```
int: n;
array [1..n] of var 1..n: q;
include "alldifferent.mzn";
constraint alldifferent(q);
constraint alldifferent([ q[i] + i | i in 1..n]);
constraint alldifferent([ q[i] - i | i in 1..n]);
solve :: int_search(q, first_fail, indomain_min, complete)
satisfy;
```

2	3	4	5	0	-1	-2	-3
3	4	5	6	1	0	-1	-2
4	5	6	7	2	1	0	-1
5	6	7	8	3	2	1	0

The above tables illustrate how sum of row and column number (left) and their difference (right) vary.

The final solve line in the code above is actually quite magical. The parameters provided there can be the difference between a solution derived in seconds, or in hours, or even not at all.

Let's see what they do then. First of all, `int_search` as you may guess from the name, searches for integer values within `q`. The `first_fail` parameter is interesting as it tells the compiler to first try the solutions that have a greater chance of failing first. In context to the `n-Queens` program, the solver will try to place a queen in the column with the fewest free spaces. This way, if it fails, it will quickly backtrack rather than going down the wrong path for longer. The third option – `indomain_min` instructs the compiler to start with the lowest row number (like we did in the manual solution above). Finally, the `complete` parameter makes the program look for all possible combinations till it finds a solution.

As you can see, while the solution is short, sweet and fast, it takes considerable understanding of the solution to model the problem in a way that can lead to a solution. Like any programming language, this is an intuition that the programmer needs to develop, as constraint programming has no shortcuts.

Conclusion:

Constraint programming is an exciting paradigm of computing, one that many people don't come across soon enough. As you might have guessed from the above article though, it is quite powerful when applied correctly.

You might also be able to understand why it is not more commonly used. It isn't really something you can write an entire software package in. For some kind of problems though, it can be the perfect tool for the job.

The good news here is that, you don't need to use a pure constraint programming language to take advantage of this paradigm. For one, it is possible to embed such programs within traditional software so the constraint programming bits can be written in their native language. For instance, you could build a Sudoku solver that combines a Python / Java / C++ program for the UI with a constraint programming at the back end that actually solves the problem.

The popular ECLiPSe Constraint Programming System (not to be confused with the Eclipse IDE) can be embedded and called from C / C++ and has an interface for C / C++, Python, Java, and even PHP. The various Prolog implementations also often have a C / C++ interface.

There are also many libraries available that add constraint programming features to traditionally imperative programming languages. For users of C/C++, there are Gecode, Minion and Comet. For Java developers there are Choco and Cream. For Python, you have Python-constraint and Numberjack. There is also a multi-language constraint programming library by Google called `or-tools` that supports C++, Python, Java and .NET.

There are many domains and paradigms of programming that can make certain kinds of programs much simpler to develop. Now that you have some knowledge of constraint programming in your vocabulary to pull out whenever needed, hopefully you will explore and find out more. >

*n-links solution



*ECLiPSe

>>If you're looking for a programming environment that focuses on constraint programming, ECLiPSe is an open source project to look into. The ECLiPSe programming language is based on and compatible with Prolog.

<http://dgit.in/EclipSe>



*Numberjack

>>Looking for a constraint programming library for Python? Look no further than Numberjack. This free and open source library comes with a number of solvers and is easy to use.

<http://dgit.in/Numberjack>



*or-tools

>>Google has its own set of tools and libraries for constraint programming called `or-tools`. This library is open source, and can work with C++, Python, Java, and C#. So what are you waiting for?

<http://dgit.in/or-tools>

INKSCAPE

Designing stock vector graphics calls for intense knowledge of Adobe Illustrator. The paid tool is a one-stop shop for all vector design needs. But we're not pirates here are we? Enter Inkscape – a free and open source tool to design professional vector graphics. This easy-to-use tool is also easier to master, learn the basics and jump into these advanced tips and tricks to make vector graphics on the go.

If you don't already have it, download it here: <https://inkscape.org/en/>

Reduce system lag while designing heavy graphics

Designing heavy, vector-based artwork demands more computation – calling more CPU cycles – that, in turn, makes your system slow. If you don't want to upgrade to better hardware, follow these three simple tricks to reduce system lag.

Your system usually starts lagging if the number of nodes on your vector graphics increases. Nodes are the points on the edges of your graphic that gives it shape. In order to reduce lag, avoid all the unnecessary nodes.

Another reason for the lag is use of filters. Filters such as “Gaussian blur” make the object heavy. To deal with it, place the object (on which the filter has been applied) on a different layer. When editing your vector, you can hide the layer to avoid it from demanding more computational resources. Zooming in close to the object also degrades your system performance, so it's recommended that you zoom out and edit your objects.

Transform selective nodes

You can give an object an entirely different identity by selectively transforming its nodes. Suppose

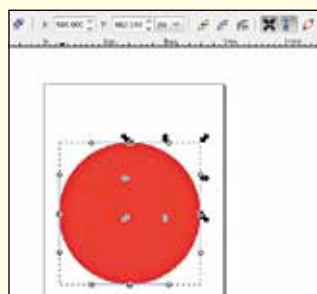


Inkscape09

Downloading like a boss10

Tips & Tricks has its own page numbers, and does not follow the rest of the magazine's page numbers. This is done to ensure that you can cut out and save T&T in a separate folder for later reference.

you have an object. First, convert it to a path and then press [F2] to edit path by nodes. Then,



The four-arrow icon on the toolbar shows the transformation handles

select two or more successive nodes and click on “Show transformation handles for selected nodes” located on the toolbar at the top. Transformation handles will then appear; you can move the handles to give any shape to the object.

Paste in place

If you perform regular copy-paste jobs on an object, Inkscape pastes it right under the mouse cursor. However, if you want to paste it in the original position, use [Ctrl] + [Alt] + [V] instead of regular [Ctrl] + [V].

Paste with style

You can also carry forward the style of one object to another without the need of tweaking its properties. Do this with the help of the “Paste Style” feature that applies the style (fill, stroke and font settings) of the first object from the clipboard to the current selection. To use the feature, hit [Shift] + [Ctrl] + [V] while pasting.

Create your own default template

If you don't want to set the page according to your standards

each time you launch Inkscape, this tip is for you. This you can do by creating a template, which is shown to you whenever you launch Inkscape. It's an easy way to quickly get to the more engaging task of designing.

To create a default template, open ‘Document Properties’ by navigating to File > Document Properties or by pressing [Shift] + [Ctrl] + [D]. Change the size of the document in the ‘Custom Size’ section as per your preferences. Next, to permanently keep these settings save this file as “default.svg” at the following path:

For Windows: C:\Users\[Username]\AppData\Roaming\inkscape\templates\

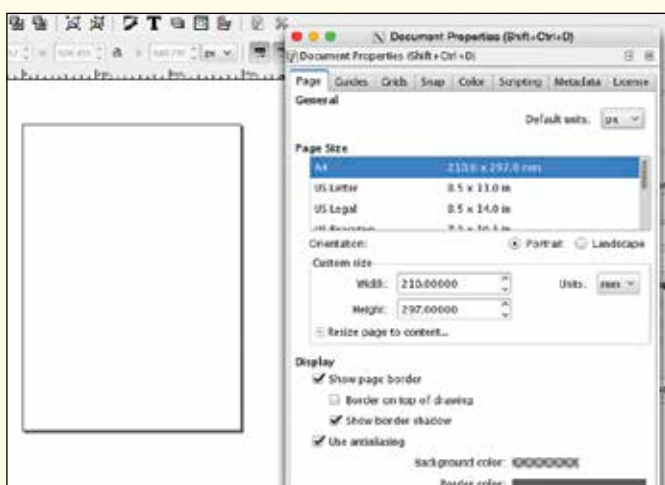
For Linux: ~/home/username/.config/inkscape/templates/

For Mac: /Applications/Inkscape.app/Contents/Resources/templates/

That's it. Every time you launch Inkscape, you'll be presented with your custom template.

Use the XML editor

Inkscape provides a built-in XML editor that displays the entire tree of the document. You can edit the document and find the corresponding changes in the XML tree. XML editor can



Change the size once and get the same dimensions every time



The XML version of your stock vector graphic is shown in the right pane

be launched by pressing [Shift] + [Ctrl] + [X].

Draw freehand and regular paths

As with any other graphic editor, arbitrary shapes can be drawn using the pencil tool. Use [F6] to select pencil (freehand tool). On the other hand, it is also possible to draw regular shapes if freehand is not your cup of tea. Regular shapes can be drawn using Pen tool ([Shift] + [F6]). The pen tool, unlike pencil, creates sharp nodes, which don't have any curve handles. If you still want to create a smooth Bezier curve, just click and drag using the pen tool. The following line will then have two collinear opposite handles. Transform these handles to give the line your preferred shape.

Combine or break apart compound paths

If there are two or more sub-paths, Inkscape considers each of them as an individual path. These paths can be combined into a compound path by selecting two or more of them and hitting [Ctrl] + [K]. To split a compound path into separate paths, press [Shift] + [Ctrl] + [K].

Note: Since the path has only one fill and stroke, all paths in a compound path will get the style of the first object being combined.

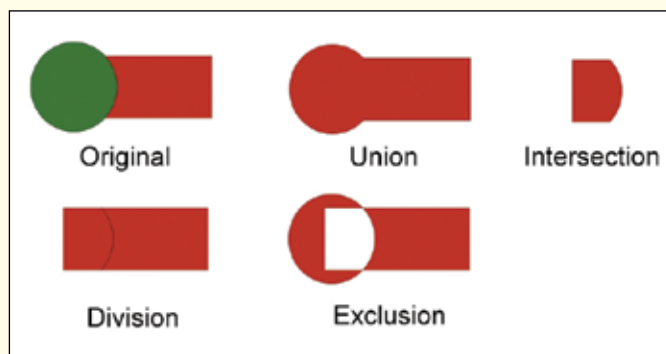
Convert any shape or text to path

You can convert a shape or text to a path by using [Shift] + [Ctrl] + [C]. Converting an object to a path will cause it to lose its original properties. That means you can't edit the text or modify the corners of a rectangle if you convert it to a path. However, all the path properties – nodes, handles, Boolean – are added to it.

Combine objects using Boolean operations

Boolean operations such as 'Union', 'Intersection', 'Difference' and others can be applied to two or more paths. To apply a boolean effect, first you need to convert it to a path. Let's look at each of these operations:

Union: This operation clubs two or more objects into a single object. To do this, select two or more objects and hit [Ctrl] + [+].



Boolean in the works

Intersection: Intersection, as the name suggests, intersects two or more objects. [Ctrl] + [*] is the necessary hotkey.

Exclusion: Unlike most other Boolean operations, Exclusion works only with two objects. It subtracts the common portion between two overlapping objects. In addition to this, two additional nodes are added where the paths intersect. Hotkey: [Ctrl] + [^]

Difference: This operation subtracts the second object from the first object. Difference is again possible only with two objects. Select two objects and hit [Ctrl] + [-].

Division: Division adds the edge of the overlapping object to the underlying object and removes the rest of the overlapping object. Hotkey: [Ctrl] + [/]

Put text on path

The simplest way to put text on a path is by drawing a path or an object and converting it to a path. Then, with the text tool write something, select the text as well as the path and select 'Put on path' option located under 'Text'.

Lighten a path using 'Simplification' command

The 'Simplification' command reduces the number of nodes on a path while still almost preserving the object's shape. Usually, paths drawn using the Pencil tool have more than one unneces-

sary node. Reducing the nodes not only makes the path light, but also adds a smoothening effect to it. The simplification tool is best used for reducing system load. To apply simplification, select the path and hit [Ctrl] + [L].

Increase simplification threshold

The amount of simplification is called the threshold. It depends on the size of the selection. That means a large object will simplify insistently over a simple path. Simplification threshold can be increased by pressing [Ctrl] + [L] in quick succession (where the time between two calls is less than 0.5 seconds). With this, each call that follows has increased threshold over the preceding one.

DOWNLOADING LIKE A BOSS

As with all worthy pursuits, downloading is an art form that's worthy of its own secret cult and ritualistic idol worship. These tips and tricks will teach you some of the deepest and darkest secrets of the downloading realm, granting you access to the fringes of supergeekdom.

Finding popular software

If you like discovering new software under different categories, you should have a look at File-Hippo. They have a good categorisation of software that lists out the most popular ones at the top and also has maintain a section that only displays recently updated software.

Using Ninite to grab the latest software updates

We all know how easily on can download and install software in bulk via Ninite. For those not in the know, Ninite is a little utility that bundles together the software that you need into a neat little executable file that

will install all the programs from one interface. What you may not know is that if you keep the initial installer and want to check on software updates, or just generally want to keep everything up to date, all you really need to do is run the installer again and the program will do that for you.

Use the "Filetype:" keyword in Google Search

If you are browsing through articles and stories for a presentation that you need to create, then you can perform a Google search, say for nuclear fusion, by typing "nuclear fusion filetype:ppt". This will give you a list of .ppt files under nuclear fusion. This can be done for most of the document (doc, docx, odt, pdf, xls, xlsx) and image (jpg, png, svg) file types, and also the .torrent file type, just saying.



The "filetype:" keyword returns search results of selected file types

Force protocol encryption in your BitTorrent client

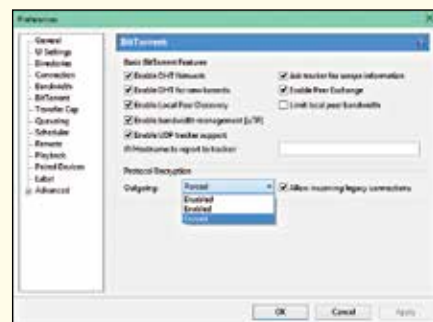
ISPs really don't like it when they detect a BitTorrent client running on your end and find traffic going across a P2P network. They will selectively throttle your speed when they find a lot of downloading happening through a BitTorrent client and that could be really annoying. Thankfully, you can bypass this issue by tweaking some little

known settings in your client. Change "Protocol Enforcement" to "Forced" and now your ISP won't be able to see through the disguise of the encrypted traffic, giving you the normal download speed as per your subscription. To boost your download speed on your torrents, you could also increase the number of your connected peers to something around 500.

Download all your photos from Facebook

You have hundreds or maybe even thousands of photos in your Facebook account. The ones

that you uploaded should already be there with you, stored on your phone or PC, but the other photos of yours, uploaded by someone else, might also interest you. Individually downloading those photos could take all day and woe be you if there's an entire assorted album to download from. PicknZip lets you download all your uploaded photos and also the photos that you are tagged in, to your PC. It gives you the option to choose which photos



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Using the Xposed Framework to save snaps from Snapchat

Xposed Framework gives you numerous modules to customise your rooted Android device, and also add features not available by default. Snapchat doesn't let you download the snaps that you receive and taking a screenshot sends a notification about the screenshot to the sender. You can of course take the super-creep approach and use The KeepChat module found in the Xposed Framework, letting you save any incoming snap secretly on your phone, without alerting the sender. One important thing to note is that using third-party applications to save snaps isn't really safe, and such services were responsible for all the photo leaks from Snapchat. You will also find an Instagram Downloader and Vine Downloader under the Xposed Framework.

Choosing the right DNS service

You should know that though the best DNS service is the one that resolves the domain name into IP addresses the fastest, the crucial factor is the ping to and from that server. Adding or replacing a DNS server address from a random list of DNS servers claiming to be the fastest shouldn't be your way of doing things. The right way would be using a DNS benchmark tool that will find and test the best possible DNS

server according to the location of your computer on the Internet. There are a couple of benchmark tools out there and the best one we came across is GRC's Domain Name Speed Benchmark and Google's Namebench tool, both of which run a network test. Both programs thoroughly analyze your network and give you a complete breakdown of the performance of the various DNS servers at your disposal.

The programs will also automatically generate a recommendation for you, but if you can interpret the data yourself, you can pick one that you prefer.

Using the "Index of" keyword in Google Search

When you need to download a program, the download page or the download button is usually around 2-3 clicks away. So that you don't waste time in searching for the download page, add the keyword "index of" to the beginning of the software name when performing a search on Google. Say, you are searching for VLC Media Player, you could search by entering "index of vlc media player" and the search results will give you the directory listing of the software. If you want the



The Index of keyword gives you access to almost any file on the Internet

official directory listing of the software you're searching for, you need to keep an eye on the URL of the search result. This works great if you're searching for different versions of a software or a linux distribution. And just so you know, you will be able to find and download anything with this method, anything *long, slow wink*.

Updating firmware and software on router

As with any sort of hardware and software, your router too is in need of regular updates to sort out issues, add more functionality, etc. Make sure to check the manufacturers website on a regular basis to ensure that you have a fully functional router. Many a time, it's the router that's the bottleneck, slowing down your PC.

Bypassing blocks on websites

Certain websites don't let you download or save the images from their web pages by disabling right-click, which gets frustrating sometimes. If you really need to download such an image, you can find the URL of the image (ending with .jpg or .png) by going through the source of the web page. Right-click is disabled on a web page using a javascript library, so if you have multiple images to save then you could Disable Javascript from your Browser

Settings. This also helps if some javascript library reduces the resolution of the images.

Tweak your IDM settings

Internet Download Manager (IDM) is among the best download managers that's currently available. It's not free, but the good things aren't always free, are they? You can boost speeds in IDM further still by head over to Options > Connection. Here change the Connection Type to High Speed and the Max. Number of Connections to 16. This should considerably boost



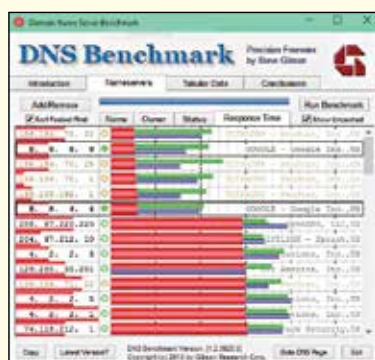
Tweaking the settings in IDM boosts your download speed

your download speeds.

Download copyright-free content

One can probably download all the content from the Internet. The only problem here being copyright laws, but we do have many sites that offer their content for free. For music you can check out Jamendo, Free Music Archive and NoiseTrade. For movies VODO and for free games and demos you could visit GamersHell. If you want to hit the jackpot for content available on the Internet, you will be blown with the extent of content that Archive.org has to offer.

Please remember to download responsibly though. You can get into a lot of trouble otherwise.



DNSBench gives you the best DNS services to choose from



Patch 2.0 for Evo

Samsung is set to release a second set of patches to fix the ongoing performance problems with Evo. <http://dgit.in/EvoPatch>



DNA Vault for data?

Scientists feel that using isolated vaults that can store data on DNA for 2M years in the Arctic are the future. <http://dgit.in/DNADData>

Q&A

Upgrading your ailing desktop? On the lookout for better battery life? We're here to help...

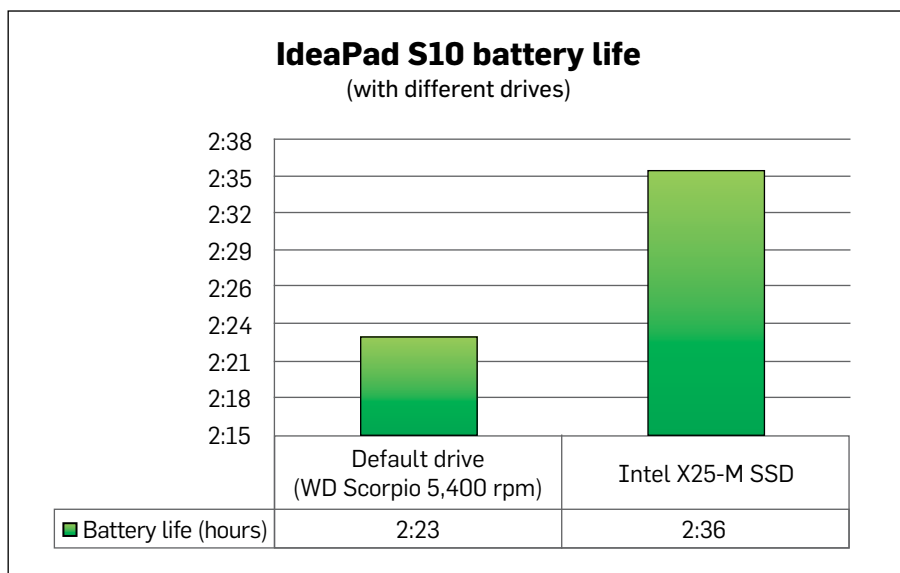
If you're stuck in the technology equivalent of a rock and a hard place, relax, stop struggling. Fire up your PC and shoot off a mail to us and we'll gladly swoop in and save the day!

SSD power draw

I use an HP laptop for my work and I travel a lot so I care much more about the battery life of my laptop than the storage space it has to offer. This is the primary reason why I wanted to shift to an SSD from an HDD and so I'm thinking of buying one with at least 256GB capacity which would be sufficient enough for my work. In order to select a good SSD, I read a few reviews of popular SSDs but none of the reviews (not even manufacturer product pages) mention the minimum or maximum power draw of the SSD in question. Is this because the power draw of SSDs is too insignificant to consider? or is it because a typical 256GB SSD may consume the same amount of power as compared to a 500GB HDD for example?

– Prithvi Bhambri

A As far as the power draw information for SSDs go, it's actually correct that most reviewers don't mention it in their write-up because SSDs consume only a fraction of the power that an HDD does and the power draw is so insignificant as to be irrelevant. An HDD primarily consumes more power because it contains a lot of moving parts, but it is important to note that laptop HDDs are slower than their desktop counterparts and also consume less power. Even in a best case scenario, depending on your usage, an upgrade to an SSD will rarely see you extract more than 30 minutes more from your battery so spending upwards of ₹6,000 on an SSD just for improved battery life may not be justified. That said, an SSD is an ideal storage device for your laptop because it's more secure and doesn't heat up as much as an HDD. It's



HDD vs. SSD - Difference between impact on battery life

worth the upgrade for the massive boost in response time and data security that is inherent in any good SSD.

Poor old system

Hello Team Digit. Me and my family have been using an old Dell XPS 200 desktop running Windows XP for the past several years and it has been serving us really well all this time without giving any trouble. But recently, ever since I heard about Microsoft and how they've dropped support for Windows XP, I also started thinking about newer hardware and upgrading or rebuilding my existing system for want of better performance. If I want to go about upgrading it, will it be possible to buy compatible components and use the same XPS case. If yes, then please suggest the required components for the upgrade along with their price.

– Rahul Vishnoi

A The Dell XPS 200 is based on the Intel Pentium D processor and uses a small form-factor case. Also, since it's a pre-built system, Dell uses a proprietary design for the system, limiting upgradability. Even if you manage to get hold of compatible components, it would be seriously difficult to figure out how to install them in the system and totally not worth the effort. However, if you're hell-bent on upgrading the existing, aging Dell XPS 200, you can add more RAM, throw in an SSD, install Windows 7 and pick up a low-profile GPU like the GTX 750 to improve performance. Although doing this would make your system run faster than it used to be, you should know that the CPU – which in your case happens to be the Pentium D, will be a major bottleneck to your system and severely hamper perceived performance. **d**



Oscar speeches graded

Head to the link below to find an article with a definitive list of Oscar speeches that have been graded on performance: <http://dgit.in/OscSp>



YouTube Kids is here

Google has finally introduced its YouTube app for kids, specifically designed for the young demographic. http://dgit.in/YT_Kids

Blog-o-matic

Here's how you could create the next Viral Top 10 blog



Mithun Mohandas

mithun.m@digit.in

Automatically populating a blog is something you'd want to do to get a head start but it does have repercussions. Auto population is, by definition, the re-posting of content that some other blog or website has produced. So firstly, you'd get penalised by Google for duplicate content so you won't be getting anywhere when it comes to earning a good pagerank. Secondly, you might end up getting a lot of DMCA notices from the original authors to pull down content. Fortunately, almost all extensions that are available to achieve auto-population forcibly affix a line attributing the source. Most websites are fine with a hyperlink to the original content and if only an excerpt is taken from the content. It's a fine line that you're toeing if this auto-populated blog is going to be a commercial venture.

Another possibility is that you'd want to curate links for internal purposes. This could be a way to maintain a record of events as they occur, since the original

source might end up getting edited later on. Lastly, one of the legitimate possibilities is that you'd like to take a break from your work, i.e. blogging, but continue to provide your readers with content. There are an infinite number of reasons for making an auto-populated blog and we're not going to be debating the morality of taking content from elsewhere, we're just letting you know of some of the ways this can be accomplished.

Get a blog

We decided to go with Wordpress for this particular DIY since it's a simple CMS that anyone can get started with easily. There are hundreds and of thousands of "getting started" articles to get a wordpress blog but we'll cover some of the basics anyway. To start off, you'll need a domain and a webhosting account. You can look forward to an article comparing the different hosting packages and domain registrars in our next issue. Once you have a domain and have pointed the DNS to your hosting, you'll need to install Wordpress. The easiest way to do this is via Softaculus, a set of easy scripts found in your cpanel (your hosting provider

will give you access to the cpanel). Once you've created your wordpress installation and put on a slick theme you can, follow any of the following methods.

Method 1 - IFTTT

IFTTT is a service which has tied up with numerous websites and provides recipes which are essentially a sequence of actions performed by the recipe. These recipes are broken down into two parts, the first is the part that triggers the recipe and the second part is the action to be performed when a trigger is set off. So we're basically looking at an RSS feed and looking for keywords. The moment we see a keyword, the IFTTT recipe will post the summary of that particular item from the feed to your blog post. To do this, first find an RSS feed that you'd like to monitor.

In IFTTT, click on "Create a Recipe", click on the big blue IF and search for "FEED", click on the RSS icon (second result at the time of writing this). Select the "New Feed Item Matches" trigger and enter the feed URL and the keyword that you'd like to monitor. Once you've created the trigger you'll need to set the action by clicking on the big blue "that". Search for Wordpress and activate that channel by providing the username and password for your blog



Softaculus: A fabulous way to start your first blog



Samsung acquires Magna

In a bid to make its place noticed in the electric car market, Samsung acquired the battery pack firm - Magna
<http://dgit.in/SamMagna>

DIY



An indispensable tool for automating blogs

(create a new author on your blog just for this recipe if need be). Then customise the wordpress post that you'd like to appear on your blog. Fiddle with the ingredients tab which appears on the right of each text box as you move your mouse over it. These ingredients are picked from the RSS feed itself, which makes customising the title for each post much easier.

If for some reason the recipe does not function properly, you'll need to fiddle around with the keyword some more.

Method 2 - Jetpack


Your Wordpress blog can be remotely managed from the Wordpress.org. For this method we're assuming that you'd have a few newsletters that you'd like to auto post onto your blog. To start, go to Wordpress.org and sign up for an account. Go back to your Wordpress dashboard and install the Jetpack plugin and activate it. Jetpack will ask you to connect your blog to Wordpress.org. After you've done that, go to Jetpack's settings tab and scroll down to find "Post by email" and click on the configure button at the bottom right corner. It should direct you to your author profile page. Here you need to enable "Post by email" to get an email address. You can now sign up for newsletters using this email address, but remember that anything sent to that id will be posted, so be a little prudent with how you use it.

Method 3 - Plugins

There are countless plugins for Autoblogging, simply googling will give you a whole

bunch and most of them are good and come with a subscription fee of around \$15/month or so. If you're serious about generating revenue from your autoblog then you might want to take a look at these options. We're now looking at Feed to Post, which is an add-on for WP-RSS-Aggregator. This too is a premium plugin but unlike other plugins, it only requires a one time fee of \$77 which is five month's worth of subscription fees compared to other such plugins. WP-RSS-Aggregator also does the job of taking multiple RSS feeds and creating one single RSS feed from those. You can use this very feed to create posts for your blog. You need to figure out which RSS feeds you are going to monitor and add them in the "feed sources" tab under WP-RSS-Aggregator's settings. Feel free to fiddle around with the options to set feed item limits and the scheduling of posts. Only if you have Feed to Post installed will you see an option that says "Force Full Content", this option pulls the entire page's content rather than just the initial few lines that the non-premium plugins will.

You can then choose to attribute the posts to their original author or...steal and attribute them to yourself. The same goes for images and other media embedded in the post. After all of this, you end up with the prepend settings box where you can add your own content right before the contents of the actual post. Like the ingredients tab in IFTTT, even here you have short-codes to pull the title, author name, date, etc. and append them to the post. After you've added content you can now choose to extract content. So if there are social sharing buttons in the content then the Extraction rules section allows you to define rules to remove such elements. That's about it, save the modifications you've made and let the plugin do its magic. You'll start seeing the data being pulled and imported onto your blog in as little as eight seconds.

We've covered just some of the ways by which you can begin autoblogging at zero cost or for a small one time fee. If you have programming experience then you can create your own plugin for wordpress to further customise the type of content that is posted on your blog in your absence. When you do come up with any innovative ways of autoblogging then do let us know. We might just feature your write up here. 



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16GB OnePlus One

A 16GB variant of the popular OnePlus One smartphone is now available on Indian shores for ₹18,999 <http://dgit.in/OnePlus16>



Bluetooth buttons

If you're someone who loves physical buttons, the Satechi bluetooth buttons are for you. <http://dgit.in/BSatechi>

Make your own brochures and posters using Scribus

Learn to print a basic poster using desktop publishing application, Scribus

Varad Choudhari

abbijit.dey@digit.in

'Scribus' is a great application for introducing newbies to desktop publishing. Also, why spend so much money on InDesign or Quark when a perfectly viable open source alternative is available in the form of Scribus? This free and open source program is available across all major platforms including Windows, Mac and Linux. You can download Scribus from <http://wiki.scribus.net/canvas/Download> and start making your posters and brochures in no time at all. Let's get started with this workshop by familiarising you with this amazingly simple application.

Understanding the basics

Let's first look at the Scribus interface and quickly set the sensible, default settings. Whenever you open Scribus, you'll be asked to choose the document layout, select the page size and set the margin. In additional settings, you can set number of pages and default measurement unit.

The default measurement is in points (pt). This system is used by the program internally to set the distances. However, we won't recommend using points as it might not be the perfect unit to start with.

Various document layouts are offered by Scribus. These include 'single page', 'double-sided', '3-fold' and '4-fold' layouts. While single page and double-sided layouts are self-explanatory, 3-fold and 4-fold layouts let you create 3-fold and 4-fold brochures. Note that the brochure layouts don't print all the folds on the same side of the page, so if you want to do that, use single page layout.

On selecting the layout, you'll be taken to the main document. The main interface is simple and easy to understand. Right at

the top, you have the title bar followed by the main toolbar. There's only one toolbar with all the basic and necessary tools, which include the file management options (new, open, save), editing options (cut, copy and paste) and options to add object(s) to the document (text, image, line, shapes etc).

The document area shows the page in the layout that you'd previously selected, displayed along with the margins.



Change the grid settings for easy alignment of the elements on the page

At the bottom, there are options to manage the document area. You can change the measurement unit from here as well. Beside this is the image preview setting. You can choose from High, Normal and Low as the preview quality of the images to be displayed on your screen. There's a Zoom in and Zoom out button and an option to manually enter the zoom amount. If you have more than one page in the document, you can use the Next page and Previous page buttons. Additionally, there's a toggle button for color management and a Preview mode at the bottom right.

Now that you've been introduced to the user interface, let's quickly make a simple poster.

Making a simple poster

Open Scribus and select 'Single page' document layout with A4 page size and millimeters as the default unit. Hit 'OK' and you'll be taken to the main document. On this page, we'll design our poster. By default, grids are turned off. We recommend turning them on for proper alignment. To do this, navigate to View > Show Grids. Now, if you look closely, the grid doesn't

properly occupy the whole page. You need to tweak some basic grid settings to correct this issue. Go to File > Document Setup (or Preferences) > Guides and change the major grid spacing to '30 mm' and minor grid spacing to '6 mm'. Hit 'Apply' to apply the changes to the document.

We've chosen 30 mm and 6 mm because the A4 page is 210 mm wide. Therefore, there will be exactly seven grid boxes with five small boxes inside it.

Now navigate to PDF Export > Color and change 'Output Intended' to 'Printer' and tick the 'Convert spot colors to processed colors' option. These tweaks are necessary since our output will be printed. Spot colors (CMYK) are used by press printers, whereas desktop printers use processed colors (RGB). This simple poster will print as intended on a desktop printer, so it's recommended that you convert the spot colors to processed colors and hit 'Apply'.

You can now start making a simple poster. Begin by defining areas on the



Galaxy E5 and E7

Go to the link below to get a first look at Samsung's new E-series smartphones - the Galaxy E5 and E7: http://dgit.in/E5_E7



Hidden backdoors

Recent cyber-security reports say that the NSA has been hiding backdoors in Hard Drive firmware. More here: http://dgit.in/Bad_NSA

Workshop

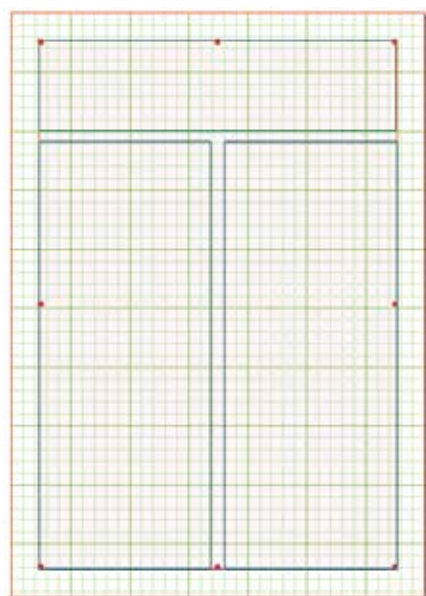
page. Select the Insert Text Frame ('T') tool and drag it across the page between the margins at the top for the header. Similarly, draw two vertical text boxes (for text columns). You can resize the text frame anytime using the handles provided.

Now you need a title and some content to add to the header and the columns. Make sure you have enough content to fit both the columns. Also, download some relevant, transparent or opaque images to add to the text.

Select header text frame and choose 'Edit Text' ([Ctrl] + [T]). This is also called the 'Story Editor'. In the text section, write your heading and click on the green tick located at the top to confirm your text.

The title will be placed in the header area. However, it will be as small as paragraph text. Now, to make it look like a title, select the header text frame and navigate to Windows > Properties or just hit [F2]. This will open the Properties dialog box. Once there, go to 'Text' tab and increase the font size. Also, change the font and align the text to the center.

Let's add a traditional colored box for the heading. Select 'Insert Shape' from the toolbar and draw a box over the title. With the shape selected, navigate to the 'Colors' tab in the properties dialog box and choose a color.



Make the layout in this way.

We need to bring the text in front of our colored box. To do so, right-click on the box, and go to Level > Lower to bottom. Now move the text below to make it appear in the center of the box.

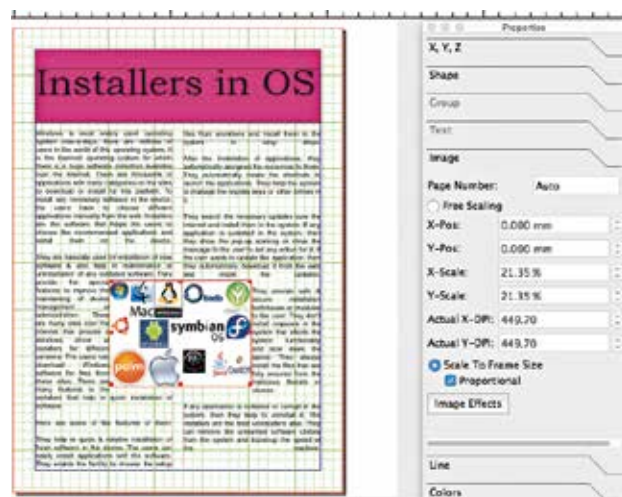
It's time to add text to the columns. Click on the first column, select 'Edit Text' and add your text in the story editor. Confirm the text by clicking the green tick. Your story is added in the first column; however, let's say we want the story to flow into the second column as well.

In such a case, select the first column and choose the 'Link Text Frames' tool located on the toolbar or simply press 'N'. With the Link Text Frames tool active, click on the second column. An arrow pointing from the first column to the second will appear. This acknowledges successful activation of the tool.

If your text is too long to fit the first column, it will automatically flow into the second. It should be noted that the properties applied to the first column wouldn't automatically be applied to the second. You need to change the properties (font, font size, alignment, etc.) of both the columns separately.

Now, we need to add images to our poster. Select the 'Insert Image Frame' tool located on the toolbar or press 'I'. With the tool selected, draw an area between the text where you want to add the image. Right-click on the image area and select 'Get Image'. Browse for your image and click 'OK'.

The image will be added to the image area. You can then manipulate the handles in the image to scale the image area to enlarge or shrink it. However, scaling



Changing the property to make the image scale to the frame size



The final view of the document



The preview of the exported PDF

the image area doesn't resize the image. To do so, open the properties dialog box and navigate to 'Image' tab. Select 'Scale to Frame Size', and now the image will automatically scale with the frame.

The major problem at this point is that the image is overlapping the text area. We want the text area to wrap around the image. To do so, select the image. Go to 'Shape' tab in the properties dialog box > Select 'Use Frame Shape' under 'Text Flows Around Frame'. Now even if you move the image frame anywhere, text will automatically wrap around it.

That's it! We're done making a simple poster. Save the document and then select 'Save as PDF' from the toolbar. Don't alter the default settings unless you know what you're doing and click on 'Save'. You can similarly make a two-sided poster or a three-fold/four-fold brochure.

To V or not to V

A medical tradition that saved the life of billions is suddenly being called into question. Here's the final word.

Space age: Europa

We're actually making our way to Europa as we speak. Hopefully, there's no perfectly black cuboid awaiting us.

The Sci-Tech Leaderboard

A leaderboard for the extreme in scientific discoveries, achievements and inventions.

Samir Alam

readersletters@didgit.in

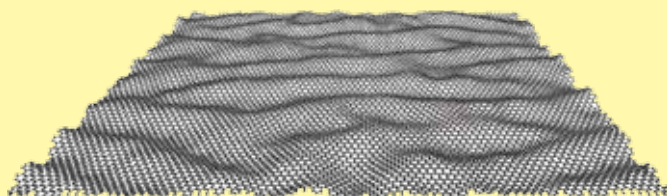
Every once in a while we humans do something right. Something perfect and pristine that deserves to be applauded. In the world of science many of these achievements and

discoveries warrant universal acclaim, such as a Nobel Prize. In other cases they find their way onto a list with superlatives in the title. This is one of those lists. So join us as we take a survey of the biggest, baddest and awesomest of things that we humans made. Until some future time when they all will be obsolete, replaced by even newer and more awesome achievements and discoveries.

The Roundest Object Ever Made

Why does this matter? Interestingly enough, the existence of the perfect sphere lies at the core of our measurement system - specifically the "kilogram problem". We use this standard unit of measurement on a daily basis but what does it actually mean? Well, the kilogram is the only unit of measurement that is tied to a specific physical object. That object is known as the international prototype kilogram or IPK and is a fabricated of a platinum-iridium alloy kept securely at the International Bureau of Weights and Measurements (BIMP). Numerous copies are in other nations but due to its elemental nature it is not a constant.

To solve the consistency problem of this standard the Avogadro Project was started which sought to measure and define kilograms as a specific number of silicon atoms. The manifestation of this design was accomplished by the Australian Center for Precision Optics and engineer Achim Leistner in 2008. The sphere was created using high precision tools to achieve its 93.75 millimeters of diameter accurate to within 0.3 nanometers. This makes this sphere the roundest object ever made. The BIMP has however decided to use the Planck constant to define the base line of a kilogram.



The Flattest Material in the World

In 2010 the Nobel Prize for Physics was awarded to Russian scientists Andre Geim and Konstantin Novoselov at the University of Manchester in the United Kingdom. They were credited with the discovery of a carbon based material called graphene which is the flattest material in the world. And when we say "flattest" we don't mean really, really thin - we are talking about the width of an atom thin - it's just that flat. Graphene manifests as a sheet-like, near two dimensional substance, making it practically invisible. In addition to its uber cool qualities, we also notice that graphene is 100 times stronger than steel thanks to its hexagonally patterned carbon atom bonds. Its potential applications as an electric conductor is remarkable and because it's cheap to produce, it's ideal for use in computers and micro-circuitry, which make it a prime candidate for adoption by tech industries. It's worth noting that the Russian duo achieved this using nothing but scotch tape and granite. On a side note, one of them also won an Ig Nobel for levitating frogs using magnetism. Just thought we'd throw that in there and hey, if we had our way, he'd win a Nobel prize for the frogs. It's not a sight we see every day.



More AIO coolers

Corsair pulled the wraps off two new CPU liquid coolers - the H100i GTX and the H80i GT. We're excited <http://dgit.in/NewCor>

Razer OSVR

Razer's new Open-Source Virtual Reality headset dev kit is a completely printable and hackable VR headset: http://dgit.in/R_OSVR

From the labs




The Most Powerful Artificial Magnetic Field

While nature has been using its milleneas to concoct star shaped magnets in the cosmos, humanity hasmade its own puny attempts. Scientist have been attempting to create stronger and more powerful magnets in the laboratory. The measure of their success is embodied by German scientist Sergei Zherlitsyn and his team, who built the world's most powerful magnetic field. Due to the high energy consumption of artificially created magnets they can only be activated for brief periods of time. In the case of Zherlitsyn, their device's magnetic field was the highest on record - at a remarkable 91.4 Teslas. To put it in context, the Earth's magnetic field is only, at its maximum, 65 microTesla. In order to achieve this power the scientists used a 200 kilogram coil of Kevlar coated copper and passed an electric current through it for two hundredths of a second. This invention is critical towards helping researchers learn more about the quantum properties of substances by observing their reaction to high intensity magnetic fields. So even as the work for the next super-magnetic field generator continues, it seems likely that this won't remain the most powerful, artificially created magnet for long.


The Fastest Computer in Existence

Is anyone really surprised that the world's faster computer is made in China? The Tianhe-2, which translates to Heav-enriver-2 or Milky Way-2, is the product of Sun Yat-sen University in China. The result of 1300 scientists and engineers, it's the fastest computer in existence, capable of 33.86 peta-flops. Not only is it the fastest computer in the world, it was even built ahead of schedule by two years in 2013. Since then it has been consistently ranked as the world's fastest computer by global agencies. The computer circuitry is domestically designed but employs the use of 16,000 computer nodes, each of which are made up of two Intel Ivy Bridge Xeon processors and three Xeon Phi coprocessor chips. In total the entire system uses 3,120,000 cores to accomplish its processes. The system is complemented by 88 gigabytes of memory per node, or a whopping 1,375 Terabytes to 1,511 Terabytes of combined memory in total. In its optimum configuration the Tianhe-2 is expected to reach 54.9 petaflops of calculating power. Unsurprisingly the system utilised a Kylin Linux as its operating system since Windows would probably slow it down. Just kidding. Sort of.







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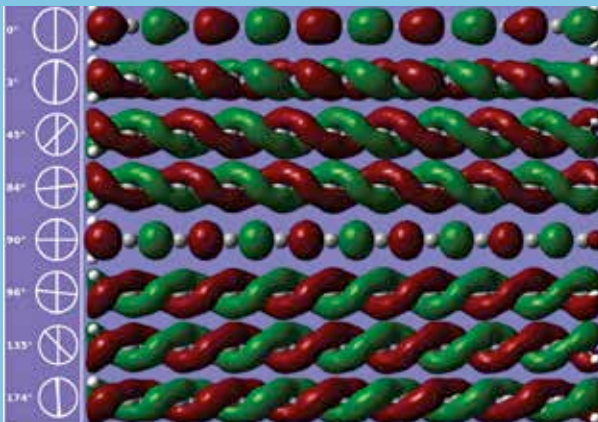
Another Chromebook

After the original Chromebook Pixel, Google has announced that it's coming up with its successor soon. <http://dgit.in/ChroPix2>



Urbane for sure

LG's released a video about its premium, upcoming all-metal smartwatch - the Watch Urbane running Android Wear. http://dgit.in/W_Urbane



The Strongest Artificial Substance

For the longest time, the flattest material in the world i.e. graphene, was also thought to be the strongest. However, in 2013 researchers created a new configuration of carbon atom based materials called Carbyne. This substance is composed of a chain of carbon atoms which are joined by either double or alternating single and triple atomic bonds. This basically means that the material is literally composed in a single dimensional layout unlike graphene which is a two dimensional material. Research has shown that the tensile strength of carbyne is greater than any known material, easily doubling that of graphene. The material is not only strong but stable and can be utilised at room temperature. It is considered a great potential replacement for carbon nanotube systems if only it could be manufactured in bulk. So far it has been found in compressed granite and cosmic dust. In the laboratory setting, it has only ever been created in small quantities.


The Lightest Material Ever Created

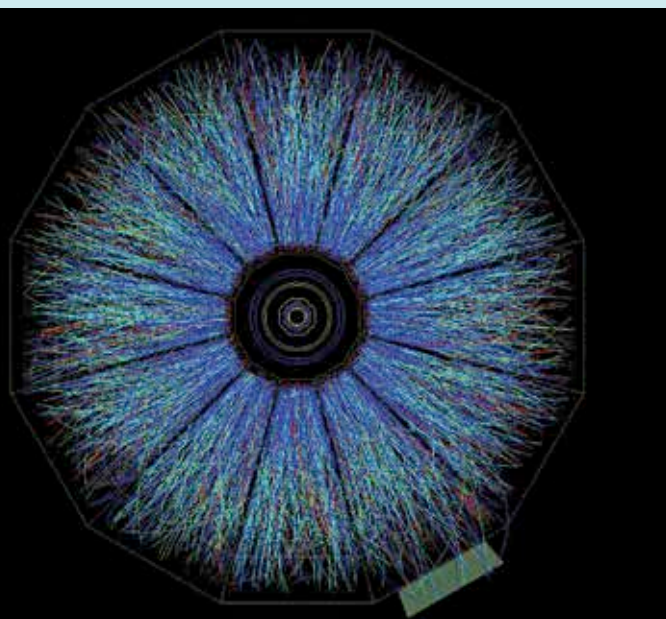
We've heard of phrases such as "pin-drop silence" and "to walk on a feather's edge" - well with the revolutionary creation of carbon aerogel - we can safely say that a pin-drop would be a cacophony in comparison and that a feather's edge would suit it just fine. The world's lightest material was created by Chinese scientists and is seven times lighter than air. Just imagine a cube, one meter in dimension made of carbon aerogel - its weight would be 160 grams - which is about the weight of an average smartphone. The new substance was created



through a novel process using graphene and carbon-nanotubes. Researchers created a solution composed of these two materials and poured it into a mould which was then freeze dried. The resulting dehydrated solution left behind single-atom-thin layers of graphene scaffold in carbon nanotubes. The process is so scalable that carbon aerogel moulds can be of any size. The final product is found to have extreme elasticity and absorption, capable of being compressed to 90 percent of its volume and absorb 900 times its own weight in oil at a rapid rate. To put it in perspective this would allow the clean of oil spills at a rapid rate with no risk. Not to mention you could float the oil tankers on it with just as much ease.

The Densest Material Ever Created

The Large Hadron Collider is intended to simulate the events of the big bang in a controlled environment. Studying the result of crashing particles has not only created a wealth of information but also resulted in a few interesting discoveries. In the process of smashing particles together, the scientists at CERN have discovered the densest material known to man - the quark-gluon plasma. This exotic substance was probably present in the immediate start of the universe. Quark-gluon plasma is estimated to be 100 times hotter than the Sun and denser than a neutron star. To put this in perspective - the Sun is at an average surface temperature of 5,600 degrees Centigrade and a neutron star is 10^{17} kilogram per cubic meter, compared to the densest naturally occurring metal Osmium at 22,590 kilogram per cubic meter. The material exists in a perfect liquid state which means that if it were stirred by a spoon, it would never stop stirring. The only thing denser than quark-gluon plasma is a black hole which thankfully hasn't popped up in the Large Hadron Collider. 





Bloggers take notice

Google is about to ban all blogs that showcase X-rated content because of a sudden policy change. More here: http://dgit.in/NSF_Ban



Better BoomSound

If a recent teaser released by HTC is to be believed, we can expect better BoomSound speakers soon: <http://dgit.in/BoomNew>

From the labs

Med Sci: To V or not to V

The last few months have seen a surge in the controversy surrounding vaccination. Cases of measles have shot up in the US, with the blame going to parents who refuse to vaccinate their children for various reasons. We look at both sides of the story, and find out if there's any merit in not being vaccinated.

Daniel Dmello

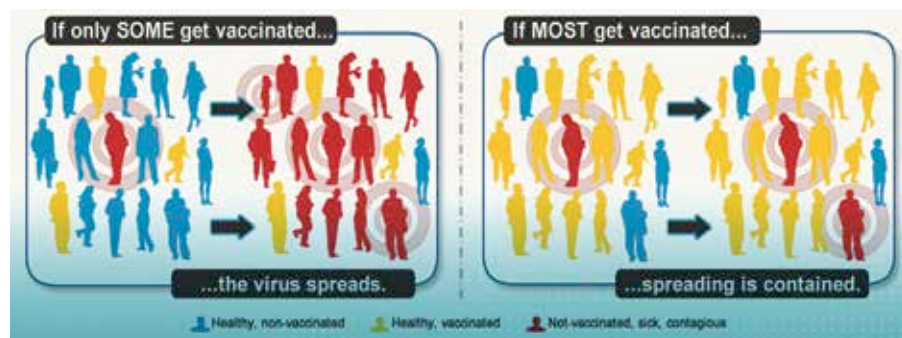
readersletters@didgit.in

The 52 kids who visited Disneyland, USA, in December 2014 and ended up contracting measles probably weren't prepared for such an eventuality. And neither were their parents. To a country like India, with a lot more measles cases, this doesn't seem serious. But to a country like the US, which had all but eradicated measles in 2000, this spurs fears of an epidemic. It also raises larger questions. Why did the children get measles? Why were they not vaccinated? Despite knowing what a serious disease measles is, many parents in the US refuse to vaccinate their kids, for fears of adverse effects. But how valid are these fears, and do they justify the risks of not being vaccinated? To answer this question, let's first look at some facts about vaccination.

What is vaccination and why is it good?

There are dangerous viruses out there looking for host bodies in which they can multiply. Measles, for example, is a respiratory disease caused by one such virus. You can get it from someone else when they cough, sneeze or talk to you. Once you have the virus, your immune system becomes weakened and even a common cold can lead to death.

Diseases like these have no cure. If you get them, your body is on its own. Doctors can only try to increase your immunity to the disease. This is why they inoculate



The guy in the bottom right is really unlucky.

or vaccinate people. Vaccination involves giving children very small doses of the virus. This dose, consisting of weak or inactive parts of the virus, spurs the body into creating antibodies that it didn't previously have to fight off the disease. Now that the body has developed this form of self-defense, it is ready to tackle a real infection later in life.

Children who aren't vaccinated and who contract these diseases can still fight it off, provided that they have clean surroundings, rest and no other infections. However, this isn't always the case. One or two children out of a thousand will develop encephalitis along with measles and die from the disease, even those living in developed countries. Globally around 500 people, mostly children, die everyday from measles, of which one third live in India. That is around 56,000 child deaths a year or around 150 per day.

Therefore, it is better to be vaccinated, since all the evidence so far points towards a drop in death rates from vaccination.

The most common vaccine is the MMR (Mumps, Measles and Rubella) vaccine. Children need two doses, one at least nine months old and the second one a few months later, since 15% of children do not get immunity after the first dose.

Herd Immunity

But there is more. It's not enough that most children are vaccinated. The vaccination rate for some diseases like measles needs to be extremely high, or the disease will still spread among the rest of the population.

Here is how this works. A highly transmissible disease like measles spreads like wildfire through a population, especially in densely populated areas. A small group of vaccinated children, say 50%, will not stop the spread of the disease. The disease will not spread through them, but any of the unvaccinated children are sufficient to carry it to the rest of the population. This is what happened at Disneyland. It takes just one person to infect an entire unvaccinated population. Which is why a relatively

SOURCE - CDC



Autocomplete broken

Gmail's autocomplete has been giving us trouble, and Google admitted as much.
<http://dgit.in/AutoBroken>



Band improved

An update to Microsoft's Band added a lot more functionality to the wearable, making it quite useful: http://dgit.in/Band_Upd

larger section of the population will have to be immunised to prevent a disease from spreading. This is called herd immunity.

Different diseases have different transmission rates and therefore different immunity targets. Mumps only requires a 75% vaccination rate (3 out of 4) since the evidence shows that it isn't as transmissible as measles, which is so bad, it needs a 95% vaccination rate to prevent an epidemic. Some children will always be too young or too sick to be vaccinated, but a 95% coverage rate ensures that even if a healthy person is infected, he or she will not spread the disease.

Given the fact that more deadly diseases like smallpox and polio have now been eradicated through vaccination, and that measles is similarly on the decline, you would think that parents would not have a problem with vaccination. Indeed, given the millions of lives saved over the last century, you would think that parents would be crazy not to have their kids vaccinated. However, a lot of American parents deliberately refuse vaccination. They are colloquially referred to as anti-vaxxers. Which brings us to the various beliefs people have about vaccination, and how valid they are.

Do anti-vaxxers have a valid point?

Even though countries like the US allow some parents to opt out of vaccines because of religious or personal beliefs, evidence shows that even the most religious communities are happy to have their children vaccinated. Instead, the main reason parents cite in refusing vaccinations is safety concerns.

• Vaccines cause autism

This belief can be traced back to a TV interview on Oprah where actress Jenny McCarthy linked autism to vaccination, without any scientific evidence. There was also a 1998 study in the Lancet medical journal that is used as a basis for this link. However, this paper was retracted for poor selection bias in using sample sizes. It was also found that the medical records of all 12 patients in the study were altered or misrepresented. All follow up studies and meta-analyses (analyses of all previous studies on the topic) have not only found no

link between the MMR vaccine and autism, but have also found that the vaccine is safe. Studies have also found that there has been no spike in autism cases after the MMR vaccine was introduced, nor is there a clustering of autism cases in children directly after vaccination.

• Over vaccination can hurt your immune system

There is absolutely no evidence to support this.



Unlike the person in the image, it is best to get vaccinated when significantly younger

• Vaccinating for each disease separately is better than the 3 in one MMR vaccine

Again, there is no evidence to support this, and giving the vaccines separately increases the risk of infection between vaccines.

• Vaccine science is based on shaky claims

The best thing about living in the internet age is the ease at which you can conduct your own personal research. A visit to Google Scholar, PubMed or NCBI to read the scientific literature should leave you with no doubt as to the science behind these claims.

• Vaccines could be wrong because science has been wrong before

Yes, science has been wrong before, but this is no reason to doubt that vaccines are wrong given the evidence to the contrary.

• Vaccines contain mercury

This is false according to the World Health Organisation. Some vaccines used to contain trace amounts of preservatives, but the data shows us that vaccines work, and that side effects are minimal.

Vaccines are a one-size-fits-all approach to a complex problem

This is generally true, and you should discuss any concerns you have about particular vaccines and side effects with your doctor. Also, vaccines are getting better all the time, and vaccines today are shown to be effective. Would you rather not vaccinate your kids?

• Vaccines are not completely effective

This is true, but not a good reason to remain unvaccinated. In fact it should prompt parents to do just the opposite.



Wallet for default

With Google's Wallet service improving by the day, phone carriers will pre-install the service on most upcoming phones. <http://dgit.in/DefWallet>



SteamVR incoming!

Seems like everyone is jumping on the VR bandwagon as Valve is getting ready to introduce SteamVR: http://dgit.in/Steam_VR

From the labs

The Disneyland case show us that even vaccinated kids can get measles, as the vaccine is only 97% effective i.e. about 97% of people who get two MMR doses will never get the measles disease. The flu vaccine, on the other hand, only reduces risk by 23%. Some vaccines are more effective than others, and you don't need to take them all. One Pew research survey showed that 86% of scientists think MMR vaccination should be made mandatory.

• Vaccination is a personal choice

Vaccination not only prevents you from getting the disease, it also prevents you from spreading it. Choosing to put yourself and your kids at risk is one thing, but you are also putting the rest of your community at risk. In this sense, vaccination is a social obligation. Even if everyone else vaccinated their children, no vaccine is 100% effective, so even vaccinated children are at risk from your unvaccinated child.

• Vaccines are profit driven

You get this a lot from conspiracy theorists - "Big Pharma wants to make you sick. Wake up sheeple!" It is true that major pharmaceutical companies that produce vaccines are hand in glove with the government. There is good reason not to completely trust either body. And vaccines are a for-profit product. But this does not mean that vaccine science is bad. Even you do not want to rely on evidence from these organisations, you can trust the peer reviewed scientific literature that shows that it works, and the demographic data that shows that it saves lives. Also, the consensus among scientists is that vaccination is safe, so being profit driven is not a relevant point.

Why do anti-vaxxers exist if they do not have valid points?

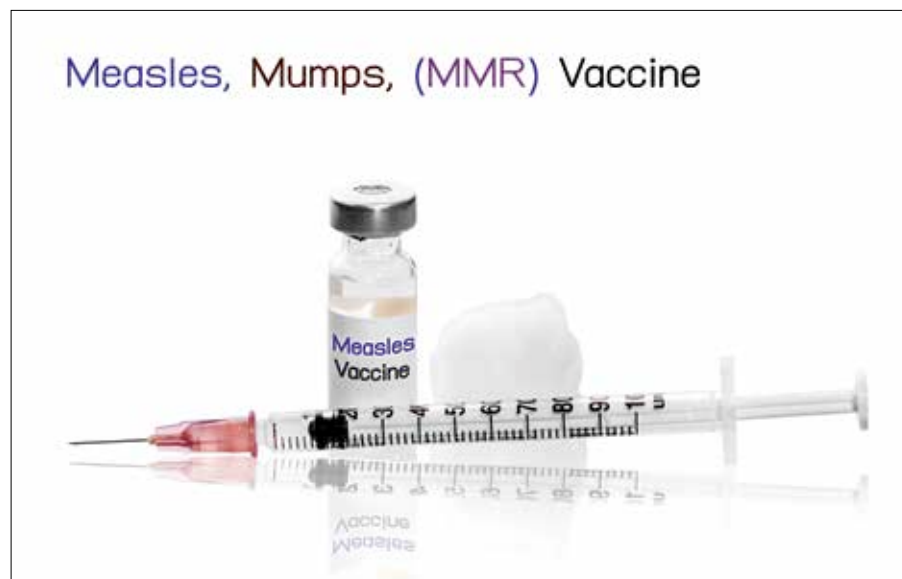
The answer to this question lies more with groupthink and a propensity towards narratives that feel right even if they are wrong.

True believers will always reject vaccines on some pretense or another. They will not let facts come in the way of their beliefs. Once anti-vaxxers choose to believe that there could be a link

between vaccination and autism (even though there isn't), nothing you can say will change their minds. This is a common psychological effect where even presenting evidence to the contrary will reinforce their incorrect beliefs.

For example, anti-vaxxers' response to the literature on autism and vaccination will only be to misrepresent the studies my focusing on minor flaws in the study designs, which does not negate the results. They just need one excuse to reject all the

senting voice, even if that dissenting voice is ridiculous and not evidence based. Media hype around bad scientific endeavours can have drastic effects on public health. In the UK, vaccination rates fell to 80% following the Lancet paper, low enough for measles to spread. In the US, the rate of unvaccinated children went up after 2000, with outbreaks in 2008, 2011 and 2014. Not all these outbreaks are linked to people being taken in by a talk show or a bad paper. Some are merely



The MMR vaccine could win a popularity contest. The syringe would not.

scientific literature and jump back into the safe arms of their narrative. To be fair, not all anti-vaxxers reject vaccination. Many of them believe in it, that it works, and think it should be administered, but also think that people should be more wary of government interference, or of possible side effects.

What convinces them to look at vaccination from this angle is anecdotal evidence that shows that some kids did change drastically after being vaccinated. It is easy to dismiss these events as anecdotal, but they merit further study. The problem is, no one has really investigated these cases much, and all the population wide data on vaccines and autism shows that vaccines are safe.

Unbalanced media reporting is also partly to blame. To appear balanced, media houses will ensure that their panels are filled with at least one dis-

examples of people relying on anecdotal evidence. They refused to vaccinate their children after they saw another child get sick after being vaccinated. This just underscores the reliance that people have on anecdotal evidence.

What you should do

Get vaccinated. Despite a minority of people displaying ant-vaccine sentiments, vaccines are proven to work across populations. They save lives, and most medical professionals encourage vaccination. Vaccines are 40 years old, they are cheap and they are getting better. The numbers for vaccine safety and efficacy hold up. About 1 in 5500 children may develop minor complications from being vaccinated. But 1 in 600 will get a disease without it. The math on this is clear. The benefit you gain on being vaccinated greatly exceeds the risk.

Past 1 million

Steam reported that DOTA 2 broke its own record with over 1 million concurrent users recently. Read more here: <http://dgit.in/Dota21M>

**\$1 Billion stolen**

Kaspersky Labs revealed that a group of cyber criminals have stolen around \$1 Billion from banks around the world. <http://dgit.in/1BilStolen>



ICE FISHING ON EUROPA

The Europa Clipper Mission and the Search for Life

Life is tenacious, versatile and rare. And it might be in our own back yard - on the Jovian moon of Europa.

Tuba Raqshan
readersletters@digit.in

Humanity has long dreamt of other worlds in the cosmos like Earth. From mythic heavens that embodied our collective imagination to distant exoplanets that we've catalogued in recent years. The search for worlds that can sustain organic life has always been part of our explorations. However, since we lack the means to travel 470 light years to Kepler-428b to find life, could there be

other options? Well, yes. Positioned conveniently right in our back yard is the Jovian satellite Europa which may hold organic life. And now we're closer to visiting this moon than ever before.

Europa - Lover of Zeus

For many years Europa has been an object of curiosity and interest for astrophysicists and astronomers worldwide. While most astrophiles know of Europa as one of the 67 known moons of Jupiter, they know it isn't even the largest one - that's Ganymede - and is the smallest of the four largest moons of Jupiter, trailing behind Io and Callisto, making it seem like nothing special. Europa was originally thought to be discovered on 8 January 1610 by Galileo Galilei. However, despite the popular belief that Galileo discovered the moons, they

were actually discovered and named by another astronomer - Simon Marius.

The German astronomer Simon Marius was a contemporary of Galileo and discovered the four moons of Jupiter just a day before Galileo. And while the dispute as to who discovered the moons first went on for centuries, it was decisively proven that Marius discovered the moons independently a day before Galileo. In recognition for this discovery he was awarded the respect of us using his given names. He was advised on these names by renowned astronomer Johannes Kepler after the lovers of the Greek God Zeus - who was the counterpart of the Roman God Jupiter, after whom the planet was originally named.

Much like the ancient myths of the Roman and Greek era's the metaphor for masks and secrets embodies the spirit of



BMW i8 in India

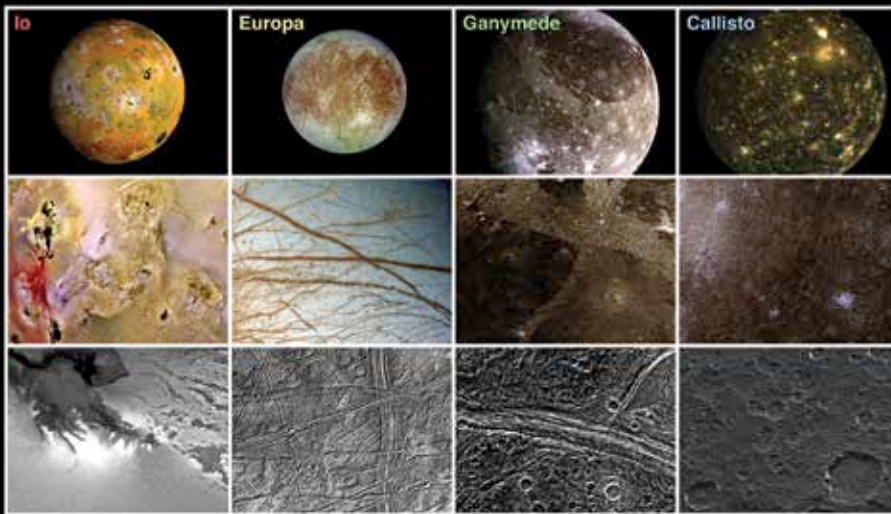
BMW and cricket legend, Sachin Tendulkar, launched the Hybrid i8 car in India.



Supremacy MX

Liquid cooling product manufacturer EKWB announced the new EK-Supremacy MX water blocks recently. <http://dgit.in/EKWBsu>

Space Age



Jupiter's four largest moons are called Galilean moons. There are 63 others.

Europa. For the longest time scientist didn't know much about Europa - it was just a moon like any other. But with the launch of Jovian probes in 1977 and 1989 in the Voyager and Galileo missions respectively, they began to get a clearer idea of what made Europa special. The moon was determined to be the sixth largest moon in the Solar System and composed primarily of silicate rock. The atmosphere was found to be made up almost entirely of oxygen, albeit in a tenuous form.

Data from these missions also gave scientists enough evidence to posit that Europa is in fact a moon of salt water encased in a shell of ice. This hypothesis was further solidified as new evidence of its surface indicated that the outer crust was a free floating ice shelf that included clay like minerals called phyllosilicates. The discovery of phyllosilicates is significant since it has always been associated with organic materials. Given the discoveries of phyllosilicates and sub-surface water the conclusion became very simple - potential life.

The search for life begins with the search for water

Life in the cosmos has so far been the rarest observation. Only on Earth do we find it, and it is everywhere on the planet. But what about out there in space? For decades we have sent out radio waves and space probes, hoping to stumble upon some evidence of life intelligent enough to talk back. We have even salvaged rocks and dirt

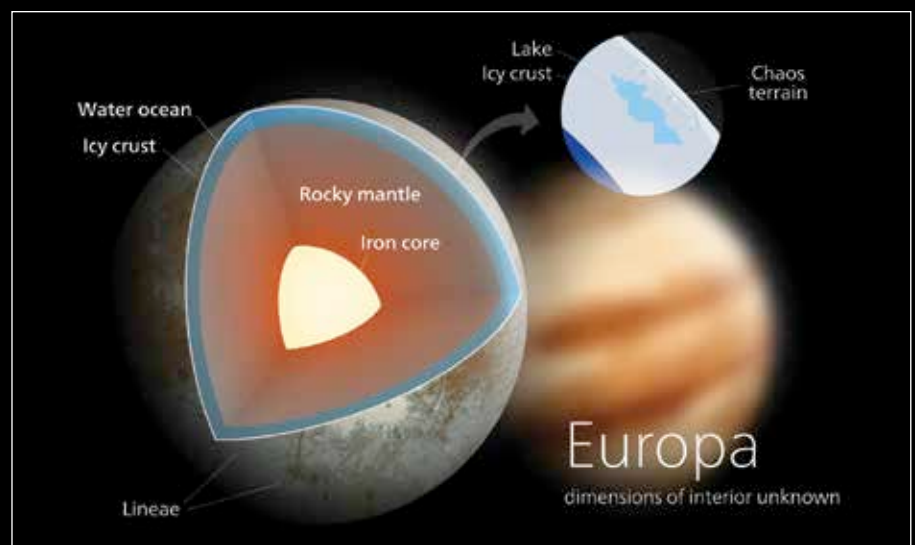
from distant planets to sift for some sign of ancient microbial life gone extinct. And through it all we have found no hope. After all, life as we know it requires a unique and often rare alchemy of circumstances to arise. The origins of life requires the right mix of temperature, fluidity and organic elements. And given Europa's abundance of subsurface water and other seductive factors, we can see why Europa is so tremendously tantalising.

The current data on Europa has indicated that under the ice shell surface lies a very deep ocean. The early probes sent showed that the moon's icy covering varied in thickness anywhere from 1.5 kilometers

to 29 kilometers. This icy surface was seen as being near pristine, with no impact craters, and being relatively smooth. This could only be if the moon is young and active and still experiencing sub-surface volcanic activity which keeps renewing the surface ice. This finding was further supported by the aberrant magnetic field of the moon which could only be explained by an electrically conductive fluid beneath the surface - salt water.

While the probable presence of water on the moon doesn't distinguish it from other extraterrestrial objects in the Solar System it does have other unique traits. The amount of radiation the moon receives from Jupiter is highly persistent and powerful. At 540 rads of output, the compounds on the surface of the moon are reduced to simpler essential elements such as oxygen and hydrogen. The radiation converts the water to hydrogen and oxygen which combine with surface elements to form carbon dioxide, hydrogen peroxide and other compounds essential for life.

Other geological evidence from Europa also suggests that the moon has a hot core. The presence of a heated rocky mantle provides the moon with the energy needed for organic life to emerge. The unique effects of Jupiter's powerful tidal forces on the moon during its 84 hour orbit causes the water to be in constant motion preventing freezing below the surface. The combination of these key elements - energy, water



The ice shell of Europa is theorised to act like Earth's tectonic plates moving over a salt water ocean.

DDR4 records broken

G.Skill's Ripjaws 4 series DDR4 RAM broke the fastest DDR4 memory world record with a 4355MHz frequency. http://dgit.in/RAM_Rec

**Encrypted USB drive**

Toshiba pulled the wraps off its new USB flash drive featuring military-grade AES 256-bit encryption

and essential compounds justify humanity's mission to Europa as the closest possible source of life in our Solar System.

Another Giant Leap for Humanity

In February of 2015, the National Aeronautics and Space Administration of the United States announced that the 2016 budget would include provisions for a robotic space mission to Jupiter's moon Europa. This marked a significant step from America to move past its "mission concept" planning for a Europa mission and shift it into high gear as a "mission directive". The Europa Clipper mission, as it is currently known, joins the European Space Agency's 2012 Jupiter Icy Moon Explorer or JUICE

which include 150 kilograms of radiation shielding, are being perfected to utilize the abundant solar energy in the region.

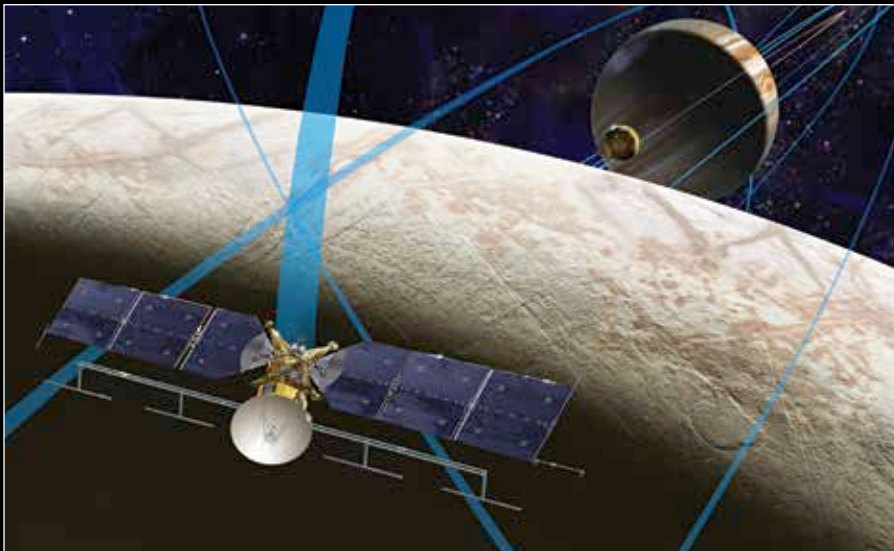
The probes within the Europa Clipper are being designed to explore the surface of the moon and determine closely its environment for habitability. The secondary mission also includes data gathering so that landing sites can be marked for future missions. The craft and its probes will actually be orbiting the planet Jupiter and will conduct flyby observations of Europa en route. The estimated number of flybys will hopefully reach 45 and will approach varying degrees of intimacy with the moon.

Although the final manifest of scientific equipment and test arrays hasn't been

Europa Clipper Explained

Travelling to Jupiter still isn't quite a walk in the park as we would hope. In the past we have sent the Voyager probes and the Galileo mission successfully within and past Jovian orbits with some measure of success. However, in the case of the Europa Clipper the mission directives are more focussed and demanding. The Europa Clipper would not only have to transverse the 778 million kilometer distance but also withstand the gigantic planets gravitational effects. To put this in context, the Earth's moon Luna is only 384,400 kilometers away, making the trip to Europa nearly 2024 times farther, and perhaps that many times more complex.

The idea of visiting Europa and other Jovian satellites has been on the books for a long time. The mission concept of the Europa mission itself took 15 years in the making. With challenges of travel distance, propulsion, fuel economy, safety and radiation risks, it hasn't been easy to plan. The heavy cost of the mission is mainly due to the fuel and radiation shielding since without the latter none of the on board electronics would be functional. And while the early missions were for shorter periods, a comprehensive mission would require the Europa Clipper to be in orbit around Jupiter for weeks, if not months. With some initial cost estimates reaching nearly USD 30 billion, it's only in the last few years that new technologies have allowed for such an ambitious and risky goal to be envisioned at affordable rates.



In 15 years, the price of the Europa Clipper concept has been reduced from USD 27 billion to USD 2 billion.

mission to visit Europa (and other moons of Jupiter). Both the missions have been on the boards for a while and have only over the last few years found financial support. The ESA JUICE mission is scheduled to launch in 2022 followed by NASA's Europa Clipper in 2025.

The Europa Clipper mission however is dedicated to the study and exploration of Europa in its entirety and has the highest likelihood of success at finding life. The overall investment by America is estimated to be over USD 2 billion and has specific goals. The yet to be built spacecraft is being designed to face the unique challenges of Jovian orbit - mainly the bombardment of radiation. The current designs for the craft,

finalised, the craft will be measuring the gravitational pull of the moon. By measuring the degree of the tugging and pulling by Europa on the Clipper, and observing the flex in the thickness of its ice shell as it orbits Jupiter, scientists will be able to confirm the presence of an ocean. If the degree of flex in response to Jupiter's gravity is high then it would mean that the ice shell isn't attached to a solid surface and is free floating while the opposite would imply that there is a solid surface below the ice. The simple success or failure of this observation alone would gain new insight into the moon that would greatly advance human endeavors towards finding life in the Solar System.

Propulsion and Power

One of the early solutions to the means of on-board power was the use of the Multi-Mission Radioisotope Thermoelectric Generators - or basically a nuclear power plant. The functionality and effectiveness of these generators had already been proven in the Mars Science Laboratory and could provide an affordable solution. In fact, of the five generators in existence, two had already been reserved for the Mars 2020 rover mission. These generators use plutonium-238 as their main fuel source which is designed to be in the form of easy to carry pellets and could be manufactured easily with some investment.



Raptr Hacked

Raptr – the gaming community service app – has been hacked and the attackers seem to have stolen user details. <http://dgit.in/RaptrH>



Klingon edition

EVGA unveiled their ultimate GTX 980 Classified Klingon edition GPU designed for extreme overclockers.

Space Age

Despite the nuclear option being available, the researchers and scientists decided to go with the solar energy option. The primary reason from NASA was that solar panels, despite their difficulties were the more affordable option for the mission. The solar panels that'll be used in this mission have been tested over the last two years to establish them as being suitable for the environment. This strategy has already been safely tested for NASA's Juno spacecraft mission which was launched in 2011 for Jupiter on a different mission.

The current plan for the Europa Clipper calls for a 2025 launch aboard an Atlas V 551 rocket to escape Earth's gravity. There are two key trajectory options towards Jupiter – either by using the gravity from Venus on the Venus-Earth-Earth or VEEGA trajectory, which would take six years transit time, or by launching it aboard a Space Launch Vehicle which would take only three years. The Space Launch Vehicle is an in-development heavy launch system designed to fill the void left by the phasing out of the Space Shuttle. As the Clipper approaches the planet, it would then use the gravity of neighbouring moons Ganymede and Callisto to fix on a resonant orbit with Europa.

Mission and Experiments

Over the course of its 3.5 year mission (after reaching its destination) the Europa Clipper is expected to make up to 45 flybys which would bring it as close as 25 kilometers of the moon's surface. The equipment



The Space Launch Vehicle is still being developed and may be first used on the Europa Clipper mission.



At its farthest point in orbit around Jupiter, Europa is suspected to exhibit bursts of water reaching 20 times the height of Mt. Everest.

is designed to withstand up to 7 years of radiation effects before being rendered unusable, which allows for a safe 3.5 year margin within which it can fulfill its mission. A possible addition to the Clipper is that of nanoprobes which would serve a critical tertiary purpose. Since Europa is suspected to have periodic plumes of water bursting out and reaching heights of 200 kilometers these nanoprobes would measure the contents of these bursts for any indicators of life or organics.

As of now various possibilities exist as to what tests can be conducted. But the key experiments on the plans includes: shortwave infrared spectrometry to identify surface materials, ice penetrating sonography to measure the thickness of ice, stereo topographical scanning to map the moon's surface, neutral mass spectrometry to study chemical structures of the surface and atmosphere, magnetometry to characterise the moon's gravity and magnetic field, a Langmuir probe study to measure the moon's plasma field, reconnaissance photography and thermal imaging. These experiments would open up a whole new chapter in our understanding of the Solar System.

Life, the Universe and Everything

The current era of space travel began with Yuri Gagarin's debut as the first human in space. The brave Soviet cosmonaut was the first human to orbit Earth in 1961 and

since then, that is all humans have done. If the Earth was scaled down to the size of a cricket ball then humans have only ever gone a total of two meters max from the surface – to the moon. We've only travelled to the moon six times while most of our space oriented activities take place about three millimeters from the surface of that cricket ball.

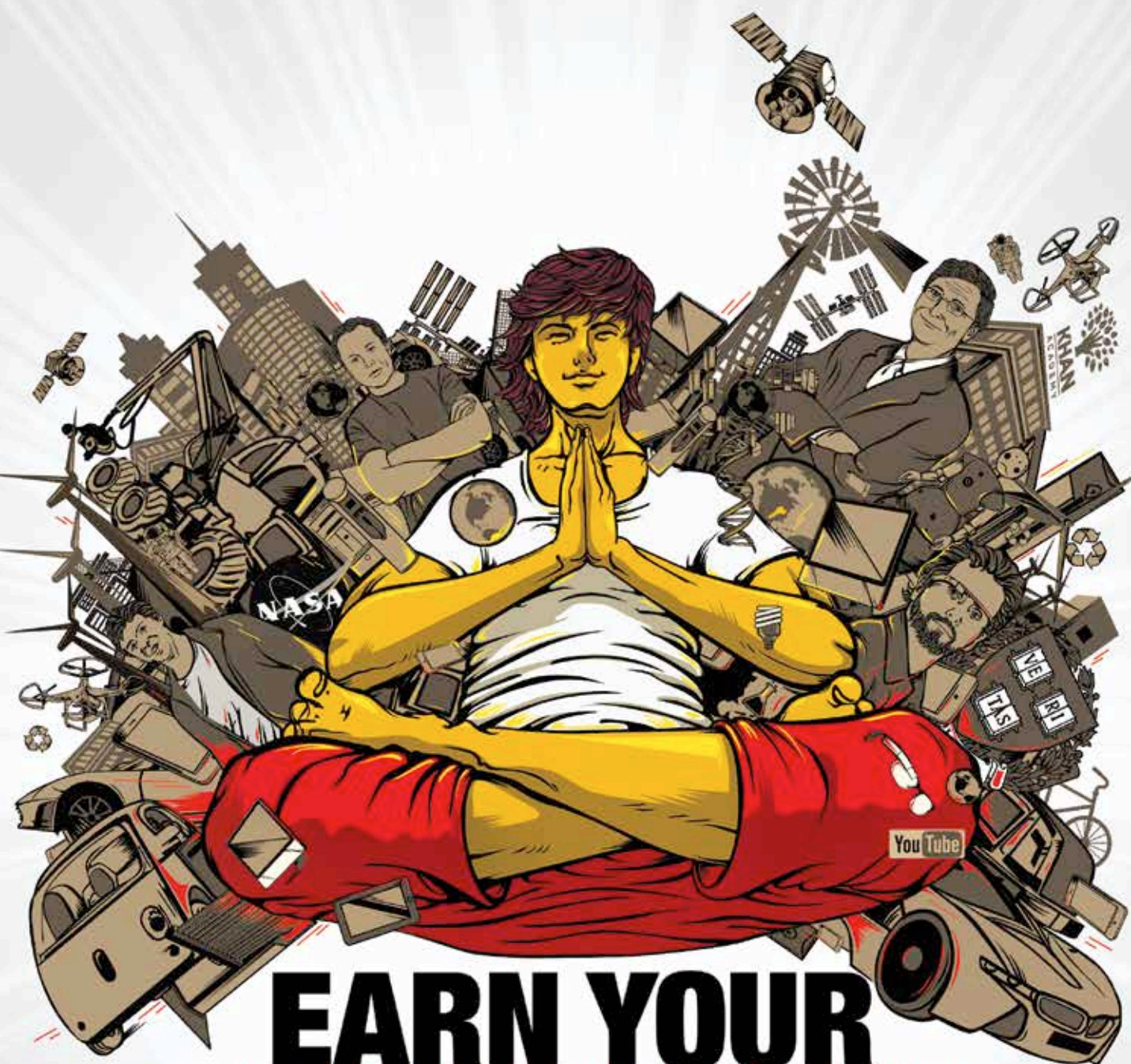
In this vast, foreboding emptiness that we're a part of, we have barely begun to illuminate the darkness. It's high time we started dreaming a bit bigger. And while the Europa Clipper mission is just a prelude, it should inspire us to take aim towards greater, similar goals. Everything we know about Europa has been based on the data sets acquired from the early probes launched towards Jupiter. Now with the Europa Clipper mission finally on the horizon, scientists are excitedly looking to dig deeper into the planet's mysteries. Life as we know it is out there somewhere and



Life on Europa could be radically different, even on a micro-cellular level.

in the cricket pitch of the universe we have barely stepped on to the field.

The search for life, even if it is micro-organic or single-celled, would be a giant leap towards furthering our understanding of life, the universe and everything. It's a momentous step towards pushing our scientific, technological and imaginative abilities to the limit and to truly discover if we are alone in the universe. So, as we imagine future Europa missions, it's not entirely surprising that once we land on that surface and cut a hole through the ice, looking into the dark waters we may just find something coming up to greet us on our ice fishing expedition.



EARN YOUR TECH KARMA

**THE WORLD IS IN PERIL AND IT NEEDS YOUR HELP!
IT'S TIME TO BREAK OUT OF YOUR LITTLE SHELL AND DO SOMETHING.
JOIN THE MOVEMENT, EARN YOUR TECH KARMA!**

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86 A KARMIC INTERVENTION | 89 KEEP EARNING TECH KARMA POINTS

By Anirudh Regidi

Disclaimer: All characters appearing in this article are fictitious. Any resemblance to real persons, living or dead, is purely coincidental. If you are the type to get offended by such coincidences, read no further.

Somewhere in Africa

Ombassa leaned heavily on his stick, for he was tired, so very tired, and stared, albeit unseeingly, into the red glare of the flames that spread before him. His face showed no sign of any weariness however; it was an aged, lined, weather-worn face that had seen much suffering and little joy in its time. You could see the dancing fingers of flame reflected in his sightless eyes, the ruddy glow of the fire bathing his face in a shimmering, orange light.

Emotion did not come easy to this old, weather-beaten farmer. Privation and hardship were as much a part of his life as the air he was breathing or the red soil beneath his feet. He did not even flinch when the wind swung around and blew the thick, black, billowing smoke into his face, stinging his eyes. He just stood there, still as a statue, watching the ravenous tongues of flame devour his plantation, one tree at a time. He stood there for a long time.

Night fell on the field, a bright moon in the sky. Akeya was making his way to the field in search of Ombassa. It was late and the cold night wouldn't do the old man any good. The news of the blight had hit Akeya hard, but not as hard as it had hit Ombassa he assumed. Jojo was pregnant with Akeya's first child, Ombassa's first grandchild, and both men had been hoping for a bountiful banana harvest and a year with food in their bellies.

Curse that blight! It had been running rampant through their village, relentlessly moving from one plantation to the next, laying waste to produce that meant the difference between life and death to these poor farmers. They had taken all the precautions they could when setting up their plantation and for a while it seemed like that their effort had paid off, theirs



Farmers in rural areas struggle to purchase seeds, let alone fertilizer.



Who are we to deny them an education? Simple ignorance on our part is no excuse.

was the only plantation untouched and even Ombassa had begun to hope. But that hope was fleeting. The blight took their fields as it did all the others, even if theirs was the last plantation to fall, which was no consolation whatsoever.

Akeya spotted Ombassa in the distance, silhouetted by the still smouldering

remains of the field. He walked up to where Ombassa was standing and spared one long, sorrowful glance at the shattered dreams and lost hope that the burning embers represented. Almost unconsciously, he reached up and touched his father-in-law's shoulder. Ombassa stirred and seemed to notice Akeya for the first

time. He shook himself out of his stupor, turned to Akeya and looked him in the eye, his own eyes filled with sadness, compassion and pity, and finding the same in return. A tear trickled down the old man's cheek. Akeya gently wiped the tear away with his thumb and together, arm in arm, one supporting the other, they made their way back home in grim silence.

This was going to be a hard year. A very hard year.

Somewhere in India

Hari woke up at 0600 every day like clockwork. He didn't need an alarm, the early morning rush of activity, the hastening footsteps of incoming travellers at the station, the hawkers setting up their stalls at the station, all these served as an unerring wake-up alarm. He yawned and stretched, wrapping his ragged rug a little tighter around himself, for the morning still had a bit of chill in the air, and he didn't feel like much activity just yet. Still, he mustn't dally too much, he wouldn't want someone else to take his spot.

Sighing, he extricated himself from the rug and carefully wrapped his few belongings into the same rug, stashing the package away in the little cranny that he had made exclusively for that purpose. He grabbed his little plastic mug and made his way to the water pump by the side of the track, leisurely performing his morning



Any old PC can enlighten the lives of the young and willing

ablutions and wondering what he'd have for breakfast. The last few days hadn't really offered much variety, only offering him a couple of vada pavs here, or a missal pav there, maybe he'd get lucky today and someone would offer him a croissant! He'd developed a liking for those, it was too bad that the stall was running out of business, these commuters really had no taste!

Ablutions completed, he donned his garb, threw some loose change into his

cup and set about his morning routine. Loitering about the food stalls, he set about shamelessly trying to guilt people into parting with their food, particularly focusing on the ones with the croissants! Today was his lucky day. Within the hour, Hari had amassed for himself quite a wholesome breakfast, consisting of a couple of vada pavs, a chocolate croissant, a half-eaten bun and a steaming Caffe Mocha that a kindly gentleman had passed on to him before leaping into a train.

Satisfied for the time-being, Hari unhurriedly set off for the end of the platform, settling on the edge and nibbling his bounty. Chunmun, noticing said bounty decided to pop over, hoping for some tasty snack as well. Chunmun was an old pal, Hari's constant companion these past two years, the only creature with which he felt some sort of kinship. They made an odd pair, an arthritic rhesus macaque and a ragged old man sitting side by side, sharing vada pavs; but most of the regulars were used to the sight by now and treated it with the vast indifference that comes from the rut of a routine.

They were both old and tired creatures in their own right, with nothing much to look forward to but a comfortable existence till the end of their days. On his more hungry nights (which were thankfully few), Hari would recall the privations in his village, the wife and daughter that he had lost to a severe drought and famine,

BILL AND MELINDA GATES FOUNDATION

The Bill and Melinda Gates foundation is the largest, privately held foundation in the world and is among the largest, if not the largest (barring maybe the UN), forces for good in the world today.

Established in 1997 with a "mere" two billion dollars in funding, the foundation now functions with an endowment in excess of 42 billion USD (28 billion of which came from Bill Gates's own pocket). The program has been at the forefront in ushering a sea-change in the world with regards to problems like food, healthcare and governance. It's done more for the well being of the planet and the underprivileged than almost every other charitable foundation combined.

Going from something as simple as bringing Internet to public libraries, it has tackled problems like HIV/AIDS in India, spent millions of dollars on anti-malaria research, launched a green revolution in Africa and now seeks to completely eradicate at least four different diseases (including Malaria and Polio) in the next decade or so.

Speaking of diseases, the foundation announced in 2010 that this will be the decade of the vaccine and have spent millions of dollars on research, the distribution of vaccines and the sanitation of infected areas. With help from others, the foundation has helped cut down infant mortality by more than half and hope to further double survivability over the next few years.

For more information, be sure to check out <http://dgit.in/1DNZLhc> for a detailed overview of what the foundation does and what it hopes to achieve.

the friends and relatives who were still suffering, still struggling to make ends meet. On such nights he would sit up and cry quietly for a little while, cursing the folly of these "educated" fools that flitted in and out of the station.

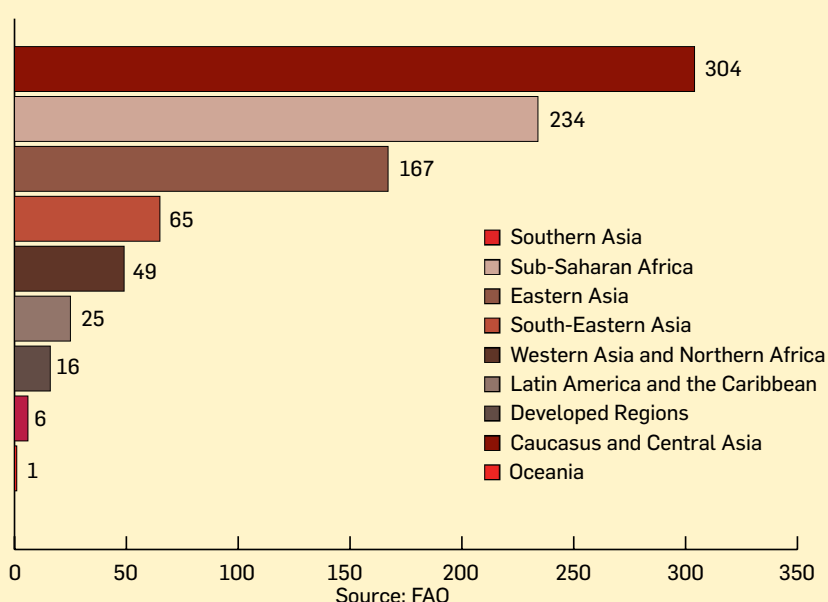
Did they not see what was happening around them? They threw away food like it was trash, money like it was free; they would spend hours staring at the little screen in their hands, laughing at some joke from the latest movie but they wouldn't spare a thought for the world around them! Didn't they realise that the lives of the farmers and the state of their farms were as much tied to their fate as it was to his? There was food enough to feed his entire village for a week just rotting away in the dumpster behind him. He made more money in a day here, as a beggar, than he did after a month of hard labour and toil in his fields back home, money that was desperately needed for seeds and fertilizers and so much more.

The city was full of food, of money, perfectly capable of supporting those very same farms that fed this city and now needed help to survive. Why didn't someone do something? Why didn't anyone care?

A starving world

While the examples above are only representative stories of lives that, quite frankly, the bulk of us ignore, either from wilful ignorance or quite simply, a complete lack of knowledge, the situations described are very real. The single largest problem facing the world today is that of hunger and malnutrition. Disease, education, power, clean water, these are all major issues, but hunger trumps them all by a huge margin. All these factors are

GLOBAL MALNOURISHMENT INDEX (IN MILLIONS)



As tasty as this snack looks, it's representative of the heights of indulgence.

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inter-related of course, you satisfy one, you automatically satisfy the other.

Of what use is education to a child with a rumbling tummy, of what use is electricity and Internet to a person who's dying from starvation? Ironically, the world was self-sufficient, in terms of food production almost 20 years ago; producing enough food to feed every person on this Earth the requisite 2100 daily calories. And even then, 800 million people suffered from severe malnourishment.

Think about that figure for a moment, that's more people than the entire population of Europe and represents over 70% of the population of India or China. Thankfully, this figure has fallen quite drastically to, but it still means that there are over 500 million starving people in the world, 200 million of whom reside in the African continent. Even more ironically, while food production in the world went up, the production in Africa fell and the number of starving more than doubled (from around 96 million to over 200 million).

This can be attributed to a variety of factors, but the most prominent of these are a lack of education to farmers (regarding something as elementary as crop rotation) to the inability to purchase, or lack of access to, high-yielding varieties

of crops, fertilizers, pesticides and other such absolute essentials.

Drawing the line

Many countries in Africa have lost more food crops to disease and drought and failed crops than they import. Organizations like the UN and the Gates foundation are doing a great deal to ensure production is improved, that farmers have access to genetically-modified crops (the high-yielding, disease resistant variety) and that they understand the intricacies of farming from a scientific standpoint, and all this will help for sure, at least in the short term. But the fact remains that we are producing more than we eat and if 30% of a country is starving, we're either eating way more than we should (which is partly true), but more significantly, we're wasting way more than we should.

The green revolution in the early 60s and 70s was essential to the survival of the human race. It was single-handedly responsible for more than doubling food production by dramatically improving yield and productivity per hectare. As dramatic as that was however, we're fast approaching a biological limit in terms of production. A quote from *The Economist* (<http://dgit.in/1AERYX>), we feel, best sums up the situation here, "*There must come a point where plants can no longer be sardined any*

closer together, stalk crushed against stalk. Similarly, at some point it may no longer be possible to persuade plants to put ever more energy into seeds. In animals biological limits are already clear: turkeys are so bloated that they can no longer walk; chickens grow so quickly that they suffer stress fractures."

So has the line already been drawn? Can we really produce no more?

A tech revolution

This might be hard to believe, but the messiah, the single most important factor that is transforming people's lives and ushering in a new era of prosperity and production, abolishing poverty and hunger, is the mobile phone.

Many of us believe that a famine is, by definition, a chronic shortage of food, and this is true. What most of us don't know is that even in times of famine, it's not always a hit to production that causes that shortage, but rather a shortfall in terms of purchasing power. This was most evident in the 1940s famine in Bangladesh that laid waste to millions.

How does the mobile phone fit in here? Taking the case of Africa, the mobile phone has completely transformed the concept of money and the traditional mechanism of conducting business transactions. The M-Pesa initiative (as it's known) is a mobile-phone based money transfer and microfinancing system (<http://dgit.in/1BiFeRz>) launched by Vodafone.

The service allows users to deposit and transfer money to and from accounts that are tied to their own mobile phones, via transactions initiated via SMS. This simple system has completely revolutionized money in Africa because it provided access to quick and easy credit (micro-finance), giving farmers the purchasing power and means to provide for their farms and, in-effect, their livelihood.

Oh, and Apple Pay (and other such services), please take note: M-Pesa is the most viable mobile-based money transfer system that exists today. Despite a number of audits by concerned banks (threatened by the success of M-Pesa) the service has proven to be robust and mostly fool proof. The service has grown well beyond a simple transaction portal and is now also being used in countries like Afghanistan to pay governmental salaries, and has inadvertently been responsible for a mas-

ENERGY TRANSFORMATION

Motive power is an essential to the success of civilization. What's the use of farming and other forms of production if that food and produce can't be moved distributed to the population as a whole? We take motive power for granted today of course, in a reasonably civilized part of the world that is, but even a city like Mubai or Delhi will not survive longer than a week if the transport system breaks down.

That said, we're so heavily reliant on transportation and motive power that a long term concern for the environment pales in comparison to the needs of immediate survival. Sure, a 100 years from now, if we don't change our way of life, the human race might die out; but right now, tomorrow, there'll be hell to pay if there's no milk or eggs in every household in the morning. Our dependence on fossil fuels will be our undoing, but our dependence on motive power will also be our undoing. We can't do anything about the motive power bit, expansion is a given, but we can do something about the fossil fuels. In our opinion, the biggest players in this space have to be Google and Elon Musk.

Why these two? Well, Elon Musk for working on producing a viable and sustainable electronic alternative to the internal combustion engine and crude oil and Google for working on their driverless car program. Both of these are a very big deal as far as the future of the world is concerned, especially if there were to exist some sort of synergy between the two plans for the future of transport. Imagine a world that's powered by a whole fleet of self-driving vehicles (including transport trucks) and electricity, automatically charging en route. The savings in terms of noise pollution alone will be worth the effort and the money. It's a future that offers a slender hope for our survival.



This pile of "e-waste" has the potential to spread so much knowledge, if given the chance

sive reduction in corruption (<http://dgit.in/1vudyqe>) and is the perfect model for any mobile-based money transfer system currently in existence.

Education for all

As important as the flow of money is the flow of information and in this regard, again, the mobile phone is key. Again, taking the case of Africa, the UN and other organizations have worked with various governments to provide necessary information to the people in SMS form. This information can be best practices with regards to farming, weather forecasts, advice on crop rotation, commodity prices, etc.

An education is pointless if you're too hungry to care, but once we work past satisfying that hunger, satisfying an

intellectual hunger is easier. Again, the mobile phone is key here and companies like Google and Intel have spent billions in trying to develop devices and services that will see a cheap, sustainable flow of information to all parts of the world.

We've seen a rapid rise in online education portals like Khan Academy and Harvard's Open Courseware, among others, but all these services suffer from the same fundamental problem as with farming. A famine of the mind is more because of an inability to access information rather than a limitation on the availability of information. The logistics just don't exist.

Statistics show that the bulk of students on Khan Academy and the like are students that already have access to basic education and who are looking to further their knowledge. None of these institutes


have succeeded in addressing the real problem that's associated with education, namely, the challenge of educating the offline world.

Earn your tech karma

We might be just that little bit complacent when it comes to information, believing that we, with our high-speed 3G networks and 10Mbps broadband have all the knowledge that we could ever want at our finger-tips, but that flow of information applies to us just as it much as it does a poor farmer on some remote farm on the other end of the world. Are you aware of that farmer's existence? Are you aware of the sort of help that you can provide that farmer? What if that old phone that's been lying unused in your drawer can change someone's life forever? Wouldn't that "sacrifice" be worth the effort?

It's time to start caring, to nudge ourselves out of this, some might say, tech-induced stupor, to move on from just simply "liking" UNESCO's page to actually doing something about it, to teach a young child that 8×2.5 is 20, to give a farmer the means to purchase some much-needed fertilizers, to teach a mother how to keep her new born alive.

It's not that hard, it needn't be that hard. Donate your old hardware, donate your knowledge and your skills; spare a moment of your time to making this world a better place. Don't let negligence ruin a world that has so much to offer!

If you're interested, and you should be, turn over to part three of our story to learn about how you can help and contribute. Remember, every little bit helps, no matter how small. You have it in you to bring succor to this world, earn your tech karma! 








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A KARMIC INTERVENTION

Be the change you want to see in the world and use technology to get things done.

By **N Ragavan**

karma
'kɑ:mə, 'kə:mə/
noun

1. (in Hinduism and Buddhism) the sum of a person's actions in this and previous states of existence, viewed as deciding their fate in future existences.

If you've ever wondered why dogs are so nice and why they turn around several times before lying down, it's because they are good and every good turn deserves another (My apologies, I deserve to go to hell for that).

Karma is the belief that if you do good things, good things will come to you. While you can literally find 2.76 million ways to gain good karma in the regular world, here's what you can do online.

Fret not, for if you are a firm believer in Karma and its philosophy, you can do your bid to make the Internet a happier place. Here are the best ways to boost your Tech Karma.

Where Can You Go?

If you were on Reddit, you'd either be submitting really interesting links and every comment you post is enveloped by a sea of praise and your upvotes go through the roof or you're a downvoted lurker who

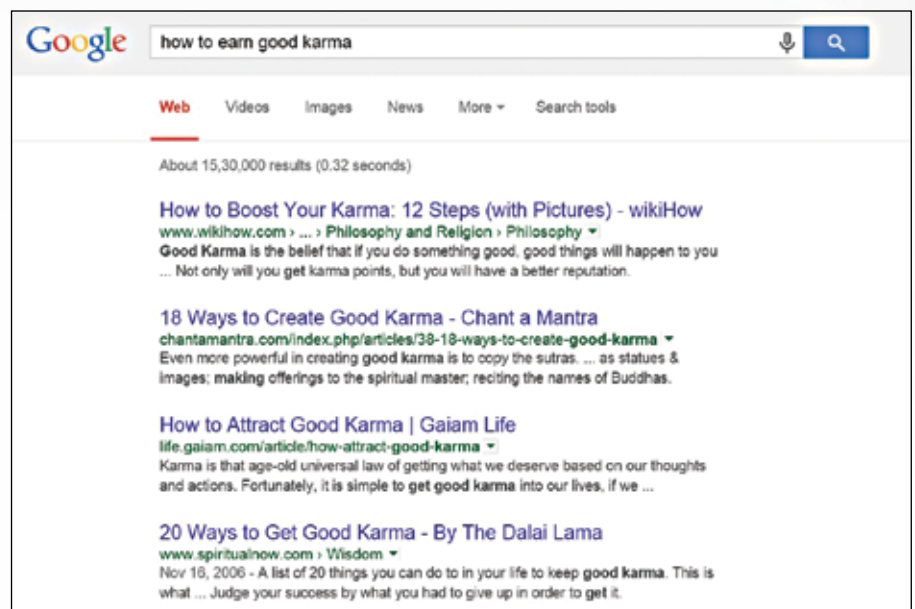
spends hours scouring the site for entertainment. Sadly, this makes no sense in the grand scheme of things young monk. True karma is achieved by giving back and there's no better way to give back than to feed a fellow man.

Rice to the occasion

Freerice.com is a non profit website run by the United Nations World Food Pro-

gramme. Their aim is to provide free education to all and to help end world hunger by providing free rice to those in need.

Originally developed as a vocabulary building game where you are expected to pick the correct answer to a given word, the website has since grown to include various subjects ranging from Geography and Grammar to SAT preparation and Literature and Languages.



15.30 million ways to die in South East Asia and not be reborn as a bug.

The objective is simple — just answer the questions correctly and earn ten grains each time. Add them up as you go along and see if you can beat my personal best of 1910 grains in 30 minutes. If you're wondering why the UN just doesn't go ahead and deliver all the rice in one go, you should know that as you play the game, ads appear in the bottom of the screen. The revenue generated from these ads are used to purchase the rice. So, when you pay them a visit, remember to make freerice.com an exception on your Adblock.

Game On

If you don't really expect your gaming experience to be laced with information and knowledge however, there is a better alternative. Karma Kingdom is a game with a cause where in game purchases and paid advertisements are used to fund the Sankara Eye Foundation treat curable forms of blindness.

This is arguably the first time you won't feel too terrible when you find out that your kid just spent a ton of money buying virtual cash you can use in a game. Currently only available as a facebook app, Avasthaa, the developer, has full plans to expand the game to other platforms and develop new games as well.

Who Can you Give to?

The Quick Encyclopedia

The only problem with freerice is that it doesn't really do much when it comes to giving you that warm, fuzzy feeling inside that can only be earned by giving. What I mean to say is that if you mean well and have the means, you should give it away to some good folk. While virtually every NGO now accepts online payments and even your airline carrier will volunteer to make a small donation in your name,

there's not much of a tech aspect to such acts of philanthropy.

If you really want to make a cash donation, a good place to start is the one place you turn to when you need answers. Wikipedia, the world's most trusted online encyclopedia is entirely non-profit and is run for the people, by the people. According to data provided by Wikipedia, there are over 4.7 million articles in the English language alone and 800 new ones are being added every day. Needless to say, these articles need to be stored somewhere and that costs a lot of money.

Every year the Wikimedia Foundation — Wikipedia's parent organization — goes on a fund collection drive. Its founder, Jimmy Wales's photo, along with captions urging you to donate, adorn every page and all they ask you to do is spare some change. Your donations will help fund one of the top ten most visited websites run by only 200 hundred employees.

Every single religion, whether it believes in karma or not, urges you to give alms to the needy. By donating to the Wikimedia Foundation you're not giving to a not for profit organization but to all the people settling bar bets, reading up on obscure cars and most importantly, the college student with a paper due the next morning.

Whatsi?

Kickstarter is where the venture capitalist in you can help bring out products that could change the world. Watsi is the Kickstarter for medicine. Based on an idea of easy access to health care for those who can't afford it, Watsi builds bridges between donors and patients.

Partnering with various organizations across the globe, Watsi puts you in touch with all the people who need money to either recover from a deadly disease or who require a simple, yet unaffordable surgery to make their lives better. With a guarantee that 100 percent of your donations will go towards helping others, Watsi is unlike any other NGO. From little kids, to teachers, to parents and grandparents, Watsi connects



How can you say no to that face?

real human beings in need with real human beings.

Burning the midnight oil

While you are peacefully asleep in bed, thousands of scientists are hard at work kicking the deadliest diseases in the behind. Sure, it's probably because of the time difference, but it's also largely due to supercomputers. In Africa, where the Ebola virus is sweeping nations and killing 90 percent of those infected, doctors are turning to IBM's Watson for answers. Working off data fed into it, Watson can analyse the data and suggest treatment options. Since analysing all that data needs computing power, using Watson isn't exactly cheap.



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This is where the World Community Grid comes into the picture. A while ago, HTC announced that your phone could help solve problems ranging from environmental issues to medical research with its app, Power To Give. Powered by IBM's corporate citizenship programme, the World Community Grid works in the exact same way. By agreeing to be a part of the grid, you can volunteer to let the grid use your smartphone, tablet, laptop or PC to crunch some numbers and send the results back to the people doing the research. It's entirely unobtrusive and works when your device is either not in use or is not exactly running heavy programmes.

All you need to do to be a part of the grid is to download the application, select the projects you want to contribute to and download the app or programme and forget about it. Unless of course you're the nosy type for whom, the World Community Grid can send out regular updates about all the groundbreaking discoveries you're helping to make.

By downloading BOINC or the Power To Give app, you can help the World Community Grid, SETI, numerous colleges hospitals and even CERN by computing

the data gathered by their Large Hadron Supercollider.

The Extra Virtual Mile What you're meant to do

While the impossible project aims to get people to help each other from across the globe and add a twist to social media, another organization intends to use the Internet to give some people the kind of support one really needs. Through infinite family, you can literally be there for somebody.

With infinite family, each user is assigned a mentee to mentor. It's up to you to make time for him or her and take genuine interest in their lives. The mentees are children living in Sub-Saharan Africa and come from broken families and worst of all, live with HIV AIDS. With no one to look out for them and nothing to look forward to, their futures seem bleak. It's no wonder that 44 percent of young offenders in South Africa commit their first crime between the ages of 10 and 15.

Through infinite family, the mentees have a person who they know are there for them. Even though thousands of miles separate them from you, through video conferencing, you and your mentee



We are the change


can build a relationship on trust and genuine interest. You can either choose to become a mentor with Infinite family or you can make a donation as appreciation for a job well done.

Be the change you want to see

The world we live in is in desperate need for change. From organizations infringing upon net neutrality to governments enforcing archaic laws and overlooking the welfare of the people. While your voice may be drowned out by the turning gears and mechanics that make up a democracy, when enough of us get together and voice our concerns, our voices are amplified and people turn and take notice.

The steps leading to change are arduous and the first step among many is to show that enough people are concerned and they will all benefit from the change you bring about. Change.org is one such place where you can help make a difference to the people you don't see or meet and a place where you can make the part of the world you live in a better place.

Step one to bringing about change is to start a petition online. Step two is to tell the world your story and ask the world to join hands with you. Finally, step three is to face the Goliaths in such a way that the sound of a million hands clapping together is thunder.

Karma at the end of the day isn't about doing something to help yourself. Karma is earned when you help those around you. Whether it's standing up to an Internet troll or showing support for people being trolled or donating vast sums of money to a charity of your choosing, if you've made the world brighter, even by a little bit, you've earned some good karma. 

World Community Grid



Statistics reflect data as of May 15, 2013.



The many drops that made the ocean

KEEP EARNING TECH KARMA POINTS

Go to www.digit.in/karma and start your journey

By Team Digit

Reading about how to save the world, thinking about doing the right thing and having the best intentions is one thing. Getting off your derriere to actually go out and accomplish something is quite something else altogether. If we don't practice what we preach, how can we be any better than a hypocrite? Therefore, we're taking a stand.

Digit is starting a movement around spreading goodwill and charity. Since we know tech, it's about donating technology to the needy. We're in the process of getting a charity onboard which works extensively with underprivileged kids in rural India and empower them with access to technology. Even if we can positively affect the life of one child by exposing him or her to the marvels of technology, our job is done. Of course, we hope to make the difference in the lives of many more underprivileged kids. That's where we need your help.

Not only are we giving away technology products from our storeroom, we're also asking our community to donate products to help us in our cause. And we're also calling on brands to join us on this journey.

“ This is a very noble initiative by the Digit team and I'm happy Asus can play a role in it. Computer literacy is still one of the challenges in rural India and it's nice to see a tech magazine in India do something about it. I wish them all the best and hope that we can, together, make a difference”

– VINAY SHETTY, COUNTRY HEAD, ASUS TECHNOLOGY PVT. LTD, CPN BUSINESS.

“ Being a leading global brand, brings with it a lot of responsibilities. We are consistently on the quest of touching and improving the lives of our end-customers. But whenever opportunity arises, as a responsible company, we have also shown our commitment to social causes. So when we came to know about Digit's Tech Karma initiative, which focuses on donating technology products to the underprivileged children in rural India, we were more than happy to be a part of it. We congratulate Digit for this noble initiative, and wish them all the best for its overwhelming success!”

– SUNIL GREWAL, DIRECTOR, SALES & MARCOM, GIGABYTE TECHNOLOGY (INDIA) PVT. LTD.

“ Antec as a brand believes in building a great ecosystem for the PC Computing environment. Tech Karma is a great initiative and we would love to support it in whatever way we can. I would like to congratulate the Digit team for coming up with this noble idea and I'm sure it will go a long way towards spreading goodwill.”

– MAMTA BHATIA FERNANDES, MARKETING HEAD - INDIA, ANTEC

Whether it's an old smartphone or a string of desktop PCs, every little help will count towards making a difference.

Go to www.digit.in/karma for further details and finding out how you can do your bit. 



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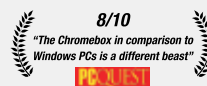
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Recommended Buys

From the best smartphone to ultrabooks, we recommend the right products for you to buy

Price Watch

We give you the latest price roundup of Kids tablets, high-end TVs and then some. Go on, the price is right.

Business Laptops

Buying laptops for professional, business or office-related use isn't the same as buying a regular laptop. At times, business laptops are better than mainstream laptops. Here's how:

Agent 001

agent001@digit.in

Business laptops are different than mainstream consumer laptops in more ways than one. Don't be hassled, it's not a big deal. I will point out the basic things you need to keep in mind when you're trying to buy a laptop for work. Apart from telling you what to look for, I'll also impress upon you specs that matter and specs that don't.

Business laptops are generally built better than mainstream laptops, but they're notorious for having an industrial, lacklustre look and feel. Some of the best business laptops from brands like Lenovo, HP, Acer, Dell all look the same – they're either various shades of black with a splash of gunmetal accents. The better looking business laptops are priced higher than average-looking business laptops, even if their specs are the same. If you're going to try and make an impression in a boardroom meeting with your peers, investing in a trendy looking, polished piece of laptop makes a lot of sense. A powerbook to go with your power suit – I get it. I think the Dell Precision M3800 is one of the best-looking business laptop I've laid my eyes on in the past year.



More than its hardware, a business laptop's built-in proprietary software is one that matters most – that's what separates it from mainstream consumer notebooks to a greater degree. Stuff like backup and restore apps, hardware maintenance and diagnostics tools, data encryption software, security suite (which doesn't just include your average antivirus but something more than what you get on most laptops), password manager, battery power manager, and other tools. Lenovo's ThinkPads, for instance, are all equipped with Lenovo's ThinkVantage software suite, which makes a ThinkPad's maintenance all the more convenient over the long run. Brands like HP, Dell, Acer and Toshiba also have built-in software utilities that's actually useful.

From a usability perspective, a business laptop tries to incorporate features like spill-resistant, backlit keys, and even a trackpoint. From a security standpoint, needless to say, the security and integ-

egrity of a business laptop is of paramount importance. To protect the sensitive data that a business laptop may hold, manufacturers equip these machines with a TPM chip. A trusted platform module embedded in a laptop's motherboard ensures that all its data is encrypted and secured at its hardware level, independent of any software installed on it.

When it comes to accessories, some business laptops come with at least a battery expansion slot – which can come very handy after your device's primary bundled battery starts becoming less efficient. The slightly more expensive business laptops also have dock support – we know machines from Dell, HP and Lenovo that support docks which further enhance the appeal of the laptops. Docks can add extra connectivity ports (USB, DisplayPort, etc), can cool the laptop connected to it, and do so much more.

Warranty and support matters. Most business laptops come with a standard

Killer Rigs

If you're looking to assemble a PC for yourself or someone else, we have you covered. Seriously.

What's necessary


- **802.11ac for faster Wi-Fi** – it's the latest wireless data transfer standard. Everything else is sloooooow!
- **Fast hard drive** – if you're getting an SSD machine, just go for it!
- **Lots of battery life** – remember, you can never have enough battery life.
- **Good feature set** – ensure your laptop has the basic connectivity options like USB 3.0 ports, Gigabit Ethernet, Bluetooth, SD card slot, etc. Nothing obvious should be missing.

What's not

- **Fastest GPU** – Why would you want to get a blazingly fast GPU on your business machine? Makes no sense. No sense at all.
- **Lots of storage** – Seriously, you don't need lots of storage. Just enough. Look for SSDs, faster access times is always better than more space.
- **Speakers** – Don't have high expectations of your laptop's built-in speakers, because they aren't meant to be very good in the first place.

one year limited warranty, just like most traditional consumer laptops sold in the market. However, business laptops have more flexible warranty upgrade options that ties in with after sales support – both of these things are very important from the point of view of safeguarding your investment in the future.

After sales support is configurable while purchasing your machine, depending on what your requirement is. If you can't afford your machine to be down for long, most brands in this space offer same day pickup and delivery of the device (after successful resolution of the issue) faster than general support terms. So do give this part of your laptop buying process a thorough read through before deciding what's best for you and ultimately purchasing the business laptop that you need.

Having considered all of these points, here are a few recommended business laptops based on my personal experience: Toshiba Portege Z30t-A or HP Elitebook 1040 G1 for a business ultrabook, Lenovo ThinkPad S1 YOGA for a hybrid notebook. Lenovo ThinkPad W540, Dell Precision M3800 or HP ZBook 15 are very good mobile workstation laptops to consider. For mid-ranged business notebooks, consider the Dell Vostro 14 3446, HP ProBook 640G1, or Acer Travelmate P645. 

ENTER THE WORLD OF VIDEO GAMES!

For the last seven years of my 33-year long career, I have been teaching Communications Studies at a School of Video Gaming. I teach a five-year series of modules I have evolved to ensure that our students graduate with top-of-the-line communication skills that are perfectly in tune with the exacting industry they plan to enter.

Anxious parents, whose children plan to storm the field of video gaming as game designers / game artists / programmers, often ask me "How shall we get him/her prepared to face the curriculum?" In this article, I shall try to respond to exactly this question.

Both positions (designers and artists) in any creative team must bring an immense wealth of background material, readings, knowledge, skills, and curiosity in a wide variety of fields. If video games are to rise above the ordinary in their gameplay, then they must appeal to their audience by being "different"! This "difference", believe it or not, is to come from the collective creativity of the team fed on a steady diet of books, films, games, histories, fantasies, etc.

The average Indian curriculum leading to the 12th Standard Higher Secondary Certificate makes no heavy demands upon a candidate's reading skills. Watered-down versions (or "retold" stories) form the bulk of the reading list, which usually receives short shrift from impatient college lecturers hired on the ubiquitous CHB (Clock

Hour basis)! A wide variety of "guides" and "notes" feed students the material that will be "regurgitated" onto the answer paper during the examination. And so, it is quite possible that the average 12th Standard student can "pass" his examination without ever facing any of the classics of World Literature in the original at all!

This, then, is the first lacuna that students desiring to study Video Game Design, Art or Programming must fill on their own. They must read as much as they can, familiarise themselves with subjects as diverse as Geography and History, Sciences and the History of Sciences. They must have, in a word, what my generation studied as 'General Knowledge' before State Governments in India stepped in to dilute the academic offering in schools across the country! And the "syllabus" for that subject, unfortunately, cannot be exactly described.

The means are varied, the objective must remain steady! Our youngsters must be better equipped to enter the world of video game creation. For it is only then that they shall be able to push the frontiers of their chosen field further and forward.

by Sunil GANU, Communications Trainer, Rubika –Supinfo game (DSK International campus). For more info visit www.dsk.digit.in.



Read or you won't be able to game



Unreal for real

Check out this insane Unreal Engine 4 tech demo which is so beautiful that it looks real <http://dgit.in/UnrealEngine4>



Coaster Tycoon Park

RollerCoaster Tycoon fans rejoice! The creators of Roller Coaster Tycoon are working on a totally new roller coaster game <http://dgit.in/RollerNew>

Which phone should I buy Agent? Please let me know.

I want a mobile phone that has at least 1GB of RAM, good camera, does not heat up easily, and has Android KitKat 4.4.4 operating system. I've done a bit of research and my dilemma is to choose between the Moto G (2nd gen) or the Micromax Canvas Nitro A11. What do you suggest? Please help me choose.

– Prakash Kurian

A Hi Prakash. To be honest, I would suggest not buying a phone till March end. The new generation devices will all be coming in around that time and you can get a better deal then.

Still if you need one right now, read below. I'm assuming your budget is below ₹15k. The Moto G doesn't have as good a camera as the Canvas Nitro. So, if that's ok for you, then buy the Moto G. Also, the Asus Zenfone 5 seems to be the best suited phone for you, it has 1GB RAM, a good camera and runs on KitKat. Lastly, you can save some money and buy the Yu Yureka, if you don't mind flash sales. That will also fit your requirements.



Always in zen mode...

Phone at ₹15k budget

Hello Sir, I wanted to buy a phone below 15k budget. I love photography so I need a phone with good camera performance, and I also need good GPU that can handle good games, as I want to play game. So please tell me which phone is best suited for me?

– Adarsh Sasi

A First, I would suggest not buying a phone till March end. The new generation of smartphones should be in by then and you'll get better deals. Still, if you do need a phone urgently, then read below. If gaming is your first priority, then go for the Asus Zenfone 5. You'll save a lot of money and the phone handles games very well. In addition, the camera also is quite good for the price. On the other hand, if

photography is your first priority, then go for the newly launched Samsung Galaxy Grand Max. It has a good camera and ok gaming performance. Also, the Grand Max is a new generation device, capable of 64-bit processing. Hope that answers your many questions.

Help needed building ultimate gaming rig

Dear Agent001, I'm building my Ultimate gaming rig, though I've taken reference from your Killer Rig section (Ultra High End Gaming). I've purchased Intel Core i7-4790K Processor but I need some alternate suggestion on below components as parts mentioned in your section are way too expensive:

1. Motherboard (ASRock Z97 Extreme 6 is not available) so request you to provide some alternate without compromising on performance. Price should be almost similar to that of ASRock model.
2. A good graphics card both NVIDIA & ATI will do but I want you to suggest the best one that should go with the configuration as ZOTAC GTX 980 ZT is way too expensive as mentioned in your Ultra HE Gaming Rig. Price should be between ₹15K to ₹20K.
3. I already have Corsair XMS3 DDR3 4 GB (1 x 4 GB) PC DRAM (CMX4GX3M1A1600C9) shall I get additional 4GB if yes then suggest a good one which should be compatible with mentioned RAM module or shall I upgrade it to something else.
3. Good PSU for the configuration that I'm working on.
4. A good cabinet though not so expensive that should fit in all with 2TB HDD that I already have.

Please suggest hardware mentioned above to build my Ultimate Gaming RIG so that I can play games without any hiccups. Thank you very much in advance.

– Satyadeep Tiwari

A Hi Satyadeep, here are my thoughts:

1. The ASRock Z97 Extreme 6 should be available online or even at brick and mortar stores. But since you can't find it, you can also take a look at the MSI Z97 Gaming 7 or the ASUS Maximus VII Ranger motherboards, both of

which are similarly priced. Alternatively, since you're building a gaming rig and are strapped on cash, you can also buy a cheaper motherboard like the ASUS H97-PRO Gamer available for around 10K and invest the money you save on it into a better GPU.

2. Between ₹15K to 20K, we recommend that you go for the NVIDIA GTX 960 from manufacturers like ASUS and ZOTAC which would set you back for ₹19.5K max. But if you do plan on going the H97 route as we suggested above, you can buy the Sapphire AMD Radeon R9 290 Tri-X available for ₹25,850 which is a great performer.
3. Since you already have a 1600MHz 4GB RAM module from Corsair, you can either buy the same module



Gaming like a boss!

to make it a total of 8GB. But since the RAM model you mentioned is quite old, it'll be difficult to get your hands on it right now. This is why it will be better if you go for a new pair of 4GB sticks like the G.Skill Sniper F3-12800CL9D-8GBSR or the Kingston Hyper-X HX316C10FRK2/16 both of which are available for around 6K.

4. Although you'll be able to power your current hardware with a 600 watts PSU like the Seasonic S12II 620W, investing in at least a 850-1000 watts PSU for the sake of future proofing seems logical. You can go for either the Corsair RM850 or the Corsair RM1000 in that regard.
5. The Source 530 from NZXT is a great cabinet with plenty of features and decent price for your configuration. Hope you have fun gaming on your new rig. Let us know how it goes.

digit RECOMMENDED BUYS

From smartphones to graphics cards, here's what we recommend for your next purchase!



TOP 3 BEST SMARTPHONES

Brand	Model	Price (in ₹)
Sony	Xperia Z3	44,990
Apple	iPhone 6	50,750
Samsung	Galaxy Note 4	54,630



TOP 3 GAMING LAPTOPS

Brand	Model	Price (in ₹)
ASUS	G551JK	79,200
MSI	GE60 2PE	1,21,200
MSI	GS60 2PE	1,44,210



TOP 3 PREMIUM POINT AND SHOOT CAMERAS

Brand	Model	Price (in ₹)
Fujifilm	X100s	62,000
Sony	DSC-RX100 II	34,950
Fujifilm	FinePix X20	35,650



TOP 3 ULTRABOOKS

Brand	Model	Price (in ₹)
Toshiba	Portege Z30t-A	1,00,000
Acer	Aspire S7-392	87,100
HP	Elitebook 1040 G1	1,12,350



TOP 3 BUDGET GRAPHICS CARDS

Brand	Model	Price (in ₹)
ZOTAC	GTX 660 192-bit 2GB	12,800
ZOTAC	GTX 750TI 2 GB	10,650
Sapphire	Radeon R7 260 X 2GB	9,950



TOP 3 BEST GRAPHICS CARDS

Brand	Model	Price (in ₹)
Sapphire	Radeon R9 295X2	1,22,150
ZOTAC	GTX 980 AMP! Extreme Edition	50,850
ASUS	GTX TITAN Z	1,25,300



TOP 3 BUDGET TABLETS

Brand	Model	Price (in ₹)
ASUS	Nexus 7 2013 (32GB + WiFi)	15,999
Apple	iPad Mini (16GB, WiFi)	15,250
Lenovo	S8 (16GB, WiFi, 4G)	16,700



TOP 3 BEST TABLETS

Brand	Model	Price (in ₹)
Apple	iPad Air 2 64GB	40,850
HTC (Google)	Nexus 9 (32GB + LTE)	44,900
Apple	iPad Air (16GB, WiFi)	27,500



TOP 3 BUDGET TO MID RANGE IEMS

Brand	Model	Price (in ₹)
SoundMAGIC	E10M	2,500
Cowon	EM1	975
Creative	HITZ MA350	1,690



TOP 3 GAMING HEADPHONES

Brand	Model	Price (in ₹)
SteelSeries	Siberia V2	5,500
Kingston	Hyper X Cloud (KHX-H3CL/WR)	5,750
Thermaltake	Ttesports Level 10M Diamond	17,280



10TB HGST drives approaching

Hitachi's helium-filled drives are finally coming to the market first with a 10TB model having seven 1.43TB platters inside <http://dgit.in/HGST10>



3TB SSDs!

SSDs with 3TB storage capacity from Fixstar have been spotted in the wild. The first of their kind yet. More here: <http://dgit.in/FixstarSSD>

SPEND SMART

Are you on the lookout for a tablet for your kids or a drone to fiddle with or maybe you just want a good TV, well look no further.



KIDS TABLETS

Brand	Model	Processor	Processor Clock	Display Size	Display Resolution	Memory	Storage Capacity	Operating System	Battery Capacity	Price (in ₹)
Ambrane	AK-7000	Cortex-A9	1.2GHz	7 inches	1024x600	512MB	4GB	Android 4.2.2	3000 mAh	4,999
Binatone	Appstar	Cortex-A9	1.1GHz	7 inches	800x480	512MB	4GB	Android 4.1	2800 mAh	8,175
Classpad	NA	Cortex-A8	600MHz	8 inches	1024x768	1GB	8GB	Android 4.0.4	5000 mAh	9,999
Datawind	Ubislate 3G10	MTK8312	1.3GHz	10 inches	1024x600	512MB	8GB	Android 4.2.2	6000 mAh	9,450
Eddy	G70	Intel Atom Z2520		7 inches	1024x600	1GB	16GB	Android 4.2.2	2800 mAh	8,999
Educren	EddyPaddy	NA	1.2GHz	7 inches	800x480	512MB	4GB	Android	3000 mAh	7,999
Ematic	FunTab Pro	Cortex-A8	1GHz	7 inches	800x480	1GB	8GB	Android 4.0.4	NA	8,984
HCL	Me Champ	Cortex-A9	1GHz	7 inches	800x480	1GB	4GB	Android 4.1	3100 mAh	6,100
LeapFrog	LeapPad 2	LF 2000	550MHz	5 inches	480x272	NA	4GB	Custom	4 AA Type	11,999
LeapFrog	LeapPad Ultra	LF 2000	800MHz	7 inches	1024x600	NA	8GB	Custom	NA	17,499
Mitashi	Sky Tab 2	Rockchip RK3188		7 inches	1024x600	1GB	8GB	Android 4.2.2	3300 mAh	6,270
Mosti	CBTAB1	Cortex-A8		7 inches	800x480	512MB	8GB	Android 4.0.4	3700 mAh	7,649
Swipe	Junior	Rockchip RK2928	1GHz	7 inches	1024x600	512MB	4GB	Android 4.1	3000 mAh	5,749
Vtech	InnoTab 2	NA	NA	5 inches	NA	NA	2GB	Custom	4 AA Type	9,099
Vtech	InnoTab 3	NA	NA	4.3 inches	NA	NA	2GB	Custom	4 AA Type	4,597



DRONES

Brand	Model	Max. Speed	Range	Camera Included	Price (in ₹)
AdraXx	Super Stable Professional	25 km/hr	NA	No	35,999
AdraXx	Mini Gyro	25 km/hr	NA	No	5,273
Babeezworld	Quadcopter	NA	50m	No	4,999
DJI	Phantom 2 Vision+	54 km/h	700m	Yes	1,15,000
DJI	Phantom	36 km/h	1000m	No	54,281
Modelart	UFO	NA	120m	No	7,500
Parrot	AR Drone 2.0 Power Edition	40 km/h	50m	Yes	44,990
Parrot	AR Drone 2.0 Elite Edition	40 km/h	50m	Yes	34,990
Parrot	Rolling Spider	18 km/h	20m	Yes	16,990
The Flyer's Bay	X-Drone Evolution	NA	50m	Yes	4,999
The Flyer's Bay	Phantom 2 Plus	NA	300m	No	5,499
The Flyer's Bay	Hoten-X Mini	NA	50m	No	3,199
The Flyer's Bay	X-Drone R Evolution	NA	50m	No	4,500
The Flyer's Bay	Beetle	NA	50m	No	2,699
Toyhouse	Super Ship	NA	50m	No	5,199



Acer XG270HU

This new 27-inch WQHD monitor with a 2560x1440 resolution from Acer features AMD FreeSync technology <http://dgit.in/AcerSync>



GamerStorm Assassin II

DeepCool known for its CPU coolers launched the second iteration of the GamerStorm Assassin CPU air cooler <http://dgit.in/DeepCGS>

Price Watch



EXPENSIVE TVs

Brand	Model	Display Size	Screen Type	Native Resolution	HDMI Port	USB Port	Price (in ₹)
LG	65UB950T	65 inches	LED	3840x2160	4	3	3,12,220
LG	55EA9800	55 inches	OLED	1920x1080	1	3	2,74,509
LG	40UB800T	40 inches	LED	3840x2160	3	3	63,996
Micromax	42C0050UHD	42 inches	LED	3840x2160	3	3	60,000
Panasonic	TH-50AS670D	50 inches	LED	1920x1080	2	2	84,332
Samsung	75H6400	75 inches	LED	1920x1080	4	3	3,90,000
Samsung	55HU9000	55 inches	LED	3840x2160	4	3	2,53,674
Samsung	40HU7000	40 inches	LED	3840x2160	4	3	76,772
Samsung	40H6400	40 inches	LED	1920x1080	4	3	63,003
Sony	KD-55X8500B	55 inches	LED	3840x2160	4	3	2,29,900
Sony	BRAVIA KDL-55W950B	55 inches	LED	1920x1080	4	3	1,39,900
Sony	BRAVIA KLV-40R482B	40 inches	LED	1920x1080	2	1	53,900
Toshiba	47L5400	47 inches	LED	1920x1080	3	2	70,973
Vu	65XT800	65 inches	LED	3840x2160	4	3	1,99,000
Vu	LED55XT800	55 inches	LED	1920x1080	4	2	94,991

Manoj Kumar,

EVP & CEO, Ricoh India Ltd takes over as Chairman, CII Office Automation & Imaging Division



New Delhi [Date] Manoj Kumar, Executive Vice President & CEO, Ricoh India Ltd, has been appointed as the Chairman of CII Office Automation & Imaging Industry Division. He takes over from Dr. Alok Bharadwaj - Executive Vice President, Canon India. Mr. Kumar is going to lead this industry forum under the CII banner. OA & Imaging Division comprises of members from IT peripherals, office automation, digital printing & finishing and digital photography industries. The division works to build an environment conducive to the growth of this industry in India, partnering industry and government alike, through advisory and consultative processes.

On his appointment, Manoj Kumar said, "I thank all the members for giving me this opportunity and responsibility as the new chairman of the Office automation and Imaging Division. With the industry growth of the annualized rate of above 10%, there is a huge demand for faster decision making, improved response time and transparency in government and

businesses. We also see tremendous business growth in our industry taking place in Tier 2/3 cities where the work styles of the customer are rapidly changing."

He further added, "It will be my honor to see that the Office Automation & Imaging (OA&I) sector is recognized as an integral part of the Information Communication Technology (ICT) industry. The product categories covered by this sector are increasingly finding tremendous opportunity in myriad of applications be it in e-Governance, Education, Healthcare, Insurance, Rural Development and Smart cities."

As a part of the growth plan for the industry, at large, the focus would be at enhancing efficiency, competitiveness and expanding business opportunities for industry, through a range of specialized services and global linkages. Led by Manoj Kumar the industry would address national agenda for all of the industry players, to help bring higher level of growth in the industry, thereby, facilitating and crystalizing common industry agenda.

■ Basic rig = ₹25,269 ■ HTPC = ₹30,459 ■ Entry-level gaming = ₹48,020 ■ Mid-range gaming = ₹63,019 ■ Ultra high-end = ₹2,77,379 ■ Digit Test Rig = ₹2,63,384

BASIC RIG

Processor	Intel Pentium G3220	3,421
Motherboard	Gigabyte GA-H81M-S1	3,590
RAM	Kingston ValueRAM 2 GB 1333MHz	1,350
HDD	Toshiba 500GB DT01ACA050	3,050
Monitor	Dell E2014H 19.5 inch LED	6,250
Graphics Card	None	0
Cabinet	NZXT Gamma	2,490
PSU	Corsair VS450	2,228
Speakers (2.1)	Creative SBS A120	1,400
Optical Drive	Samsung SH-224DB/IDDS	950
Mouse	Amkette Ash Black (Bundle)	540
Keyboard	Amkette Ash Black (Bundle)	0
Sound Card	None	0
Total		₹25,269

HTPC

Processor	AMD A8-6600K	7,200
Motherboard	MSI FM2-A75MA-P33	4,702
RAM	G.Skill RipjawsX DDR3 2 GB (2 x 2 GB) PC RAM (F3-12800CL9D-4GBXL)	4,100
HDD	Western Digital WD20EZRX 2TB	5,670
Monitor	None (your TV)	0
Graphics Card	None (HD7560D onboard)	0
Cabinet	Cooler Master Elite 120 Advanced	2,977
PSU	Cooler Master Thunder 450W	2,660
Speakers	None	0
Optical Drive	Samsung SH-224DB/IDDS	950
Mouse	Microsoft Desktop 2000 wireless combo	2,200
Keyboard	Bundled	0
Sound Card	None	0
Total		₹30,459

ENTRY-LEVEL GAMING

Processor	AMD FX6300	7,350
Motherboard	Gigabyte GA-970A-DS3P	6,250
RAM	G.Skill NS DDR3 4 GB (2 x 2 GB) PC RAM (F3-10600CL9D-4GBNS)	3,180
HDD	Seagate Barracuda 1TB	3,380
Monitor	Dell S2240L	8,250
Graphics Card	Sapphire Radeon R7 260X 2 GB	9,970
Cabinet	NZXT Gamma	2,490
PSU	Cooler Master Thunder 450W	2,660
Speakers	F&D F680	3,000
Optical Drive	Samsung SH-224DB/IDDS	950
Mouse	Amkette Ash Black (Bundle)	540
Keyboard	Amkette Ash Black (Bundle)	0
Sound Card	None	0
Total		₹48,020

MID-RANGE GAMING

Processor	Intel Core i5-4440	11,750
Motherboard	ASUS B85M-G	5,989
RAM	Gskill RipjawsX F3-12800CL9D-8GBXL (2 x 4GB)	5,950
HDD	Toshiba 1TB DT01ACA100	3,650
Monitor	Dell S2240L	8,250
Graphics Card	ZOTAC GTX 660 192-bit 2 GB	12,800
Cabinet	Thermaltake Versa H21	2,730
PSU	Seasonic S12II 620 Watts	5,620
Speakers	F&D F680	3,000
Optical Drive	Samsung SH-224DB/IDDS	950
Mouse	CM Storm Devastator (Bundle)	2,330
Keyboard	CM Storm Devastator (Bundle)	0
Sound Card	None	0
Total		₹63,019

ULTRA HIGH-END GAMING

Processor	Intel Core i7-4790K	22,985
Motherboard	ASRock Z97 Extreme6	14,999
RAM	Corsair Vengeance 16GB CMY16GX-3M2A1866C9B	13,499
HDD	WD WD30EZRX 3TB + Samsung 850 Pro 256GB SSD	20,999
Monitor	BenQ BL3200PT	73,850
Graphics Card	ZOTAC GTX 980 ZT-90201-10P Standard	44,999
Cabinet	NZXT Phantom 820	17,489
PSU	Cooler Master V1000	15,150
Speakers	Logitech Z906 5.1	22,900
Optical Drive	LG Blu-ray WH16NS40 RW	5,699
Mouse	Roccat Kone XTD	6,500
Keyboard	Corsair Vengeance K70	8,460
Sound Card	ASUS Xonar Phoebe	9,850
Total		₹2,77,379

PRIMARY DIGIT TEST RIG

Processor	Intel Core i7 - 4960X (Extreme Edition)	66,200
Motherboard	ASRock X79 Extreme 9	28,499
RAM	Corsair Dominator 32GB - 2133MHz (8GB x 4)	34,750
HDD	Toshiba DT01ABA100V	3,760
SSD	SanDisk Extreme II 240GB (x2 for HDD testing)	24,980
Graphics Card	ZOTAC GTX 980 AMP! Extreme Edition	50,850
Cabinet+ Cooler	Cabinet (NA) + Intel RTS2011LC - Stock AIO	NA
PSU	Corsair HX1050	16,291
Monitor	BenQ GL2460HM	10,900
Optical Drive	NA	NA
Mouse	Razer Ouroboros Elite	10,995
Keyboard	Roccat Isku FX	6,500
Sound Card	ASUS Essence STX	9,659
Total		₹2,63,384

Bazaar

THE LATEST PRODUCTS REVIEWED FOR YOU

The Digit Test Centre receives hundreds of products every month. Each of these products is put through a series of tests and is finally given a score. The final score is arrived at after considering a number of factors and evaluating them in terms of features, performance, value for money, build quality, and, in the case of software, even ease of use.

For better understanding of our ratings, here's a quick guide to our overall score



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Creative Sound
Blaster Roar



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ThinkPad
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ASUS EeeBook
X205TA



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HP Stream 11
d203TU



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Lamborghini
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WWE Immortals

WWE Immortals, a new free to play game for Android and iOS, that lets you fight different WWE superstars in a fantastical version <http://dgit.in/WWEImmortals>



Is bigger better?

Set to bring a budget phablet in the market, Mitashi launched the Duo King, a 6 inch phone that is priced at ₹7,499/-

Oppo R5

Slim on design, not so slim on price

The Oppo R5 comes with a super slim build, striking design and strong metal feel. It does feel better than the Gionee S5.1 as it offers a better grip as well. The AMOLED display offers great viewing angles and good colour accuracy. There is no audio jack, rather you get a microUSB to 3.5mm audio jack attachment where you can attach your earphones.

The R5 runs on Android 4.4.4 KitKat with Oppo's ColorOS 2.0 UI. The UI is smooth and doesn't stutter or lag. All apps run smooth and effortlessly but with just 11GB of available storage and no expansion slot, apps will overflow soon enough.



Price
₹29,990



Features	78
Performance.....	75
Value	60
Design.....	80

Specifications

Display: 5.2 inches AMOLED panel with 1920x1080 resolution (423ppi); **Battery:** 2000mAh; **Storage:** 16GB; **Camera:** 13MP rear with LED flash, 5MP front; **SoC:** Qualcomm Snapdragon 615; **CPU:** 1.5 GHz quad-core & 1 GHz quad-core; **GPU:** Adreno 405; **RAM:** 2GB; **Operating system:** Android 4.4.4 with ColorOS v2.0.1; **Connectivity:** 3G, W-Fi, Bluetooth

Contact

Oppo Mobile
Phone: 1800 1032 777
Email: service@oppomobile.in
Website: www.oppomobile.in

Kunal Khullar

ASUS Strix Tactic Pro

A mechanical keyboard meant for MMO



Price
₹7,250

The ASUS Strix Tactic Pro mechanical gaming keyboard sports Cherry MX Red key switches, but Cherry MX Black, Blue and Brown key switch options are also available. Right-off-the-bat you'll notice that the keyboard is really well built, has a striking design with a matte black finish all over. A highlight of this keyboard is the availability of macro options. To put it into perspective, the Strix Tactic Pro has 21 fully configurable macro keys and the ability to store macros

into three hardware profiles or virtually unlimited software profiles. As far as design is concerned, the keys are laid out in a concave pattern flush with the board to improve ergonomics. The keyboard has orange backlighting and illuminates all the keys without the option of switching backlight colour. The keyboard's USB connector cable is braided and adds durability. ASUS bundles four extra key caps with a cap puller to replace the WASD keys which is a welcome addition. Gaming on this keyboard was fun especially because Cherry MX Red keys work really well. We were disappointed to find out that the keyboard doesn't come with a wrist rest. The ASUS Strix Tactic Pro is a gem when it comes to setting up and using macros and is aimed mostly at MMO gamers. At ₹7250, the ASUS Strix Tactic Pro is certainly not a cheap keyboard and is just a thousand bucks shy of our all time favourite – the Corsair Vengeance K70. But if you're looking for a premium mechanical keyboard with rich macro functionality, this keyboard is for you.



Features	76
Build Quality	84
Value for money.....	55

Specifications

Key type: Mechanical; **Other options:** Cherry MX Black/Blue/Brown; **Anti Ghosting:** Full NKRO; **Cable:** 1.8 metre braided; **Connector:** Gold plated USB;

Contact

ASUS Technology Pvt. Ltd.
Phone: 18002090365;
Email: reachus@asus.com;
Website: www.asus.in

Siddhant Sharma



World Cup TV

Mitashi has launched a new 58-inch LED TV with 3 years of warranty, to fulfill your Cricket World Cup needs.



RTI Online

If you thought filing an RTI took a lot of trouble, you can now file one in the Government's official portal RTI Online. <http://dgit.in/OnlineRTI>

Bazaar

Alienware 13

Glitteringly glorious, but not the best anymore

The new Alienware 13 is meant to be an ultraportable gaming laptop with unique looks and distinctive style. Its screen lid is made of high quality plastic mixed with carbon fibre, its keyboard deck and chassis as firm as a ThinkPad's, giving the notebook very good build quality and rigidity. And when it comes to its looks, we can assuredly say that the Alienware 13 remains quite unique, given its angular design accents, glowing LED keyboard and logo, and overall cool quotient. The pre-installed Alienware Command Center is pretty intuitive when it comes to letting you configure the LED glow colour across the keyboard, logo and accents on the Alienware. It will make heads turn in a LAN party for sure, earning you extra brownie points if that sort of thing matters to you. Its HD webcam is great for Skype or Google Hangout, picking up voice input flawlessly for the most part.

The gaming laptop is high on features, bundling in all that a laptop selling at its price needs to have, and even more. On its back panel lies a custom PCIe bridge to connect it to an external graphics amplification device (sold separately) called the Alienware Graphics Amplifier. It's meant to future-proof the Alienware 13's graphics capabilities, by allowing you to plug in any desktop-sized PCIe graphics card and keep conquering future games. It's a great concept, one that we would've liked to test for this review, but Alienware forgot to send us the Amplifier.

The Alienware 13 has a bright, glossy QHD (2560x1440 resolution) touchscreen display. It's one of the better displays we've seen on a notebook, offering nice viewing angles and sharpness, and the multitouch input works like a charm on Windows 8 natively – but it's a mirror, reflecting any lit object in the room. Its onboard speakers are good as well. The laptop's keyboard is great to use and its touchpad isn't too bad either. The machine heats up while gaming but it copes well with fans and large vents on its bottom panel to keep temps under the 60 deg C mark. This machine is very good for multimedia use, its Klipsch speakers providing very good audio output, but drops the



Price
₹1,19,900

Interactive
review

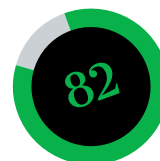
ball in the gaming department. Its combination of an Intel Core i5 chip and NVIDIA GeForce GTX 860M GPU pump out most modern games well at medium settings, but that's not even par for the course on an Alienware. On the screen's native resolution and high to ultra settings, gaming isn't worth your time. Its battery life isn't too bad at 2 hours 39 minutes in our high-performance synthetic test – of course, the more the better.

At one point of time, it would've been next to impossible to think of Alienware not being the best gaming laptop out there. But that time has come. The Alienware continues to bedazzle you with its exquisite looks, glowing LED accents, QHD touchscreen display, even its rugged build quality.

However, this 13-inch SKU blinks in the face of competition when it comes to its performance.

Its proprietary PCIe port for external graphics amplification is useless unless you shell out more money for the Alienware Graphics Amplifier. In terms of performance – which is what matters in a gaming laptop at the end of the day – the Alienware 13 loses out to couple of sub-1 lakh laptops

like Lenovo Y50 and ASUS X550JK. Does that make the Alienware 13 an undesirable laptop? Not by a long shot.



Features	85
Performance.....	80
Value	70
Design	90

Specifications

Screen: 13.3-inch, touchscreen, 2560x1440 res; **CPU:** Intel Core i5-4210U 1.7 GHz (can go up to 2.4GHz); **RAM:** 16GB DDR3; **HDD:** 1TB; **GPU:** NVIDIA GeForce GTX 860M; **IO Ports:** mini DisplayPort, HDMI, 3 x USB 3.0, SD Card slot, Ethernet, 3.5mm audio jack; **Wireless:** Wi-Fi 802.11ac & Bluetooth 4.0; **Webcam:** HD 1080p; **OS:** 64-bit Windows 8.1; **Weight:** 2.05 kg

Contact

Dell India Pvt Ltd
Phone: 1800-425-4026
Web: <http://www.alienware.co.in>

Jayesh Shinde

Google Wallet again?

With the speculations of taking the ownership of SoftCard, Google Wallet might be coming back strong owing to the success of Apple Pay <http://dgit.in/GoogWall>



New Lumias

Microsoft recently launched two new budget offerings - the Lumia 532 and the Lumia 435 at Rs.6499 and Rs.5999 respectively. <http://dgit.in/BudLumia>

TP-Link Archer C7 AC1750 Wireless Router

Affordable AC1750 solution with a little room for improvement

The TP-Link Archer C7 isn't a new router, in fact the current model would be a revision 3 SKU that only sells in one country and has six external antennae whereas this here is the v1.1 SKU which also has six antennae of which three are internal. There are plenty of AC1750 routers in the market these days and the prices have dropped tremendously in the last year and a half. The C7 has the QCA9880 at its heart which are connected to the 5dBi external antennae while the QCA9558 which handles the N radio is connected to the

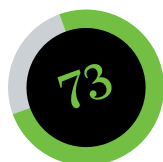


Price
₹14,999

internal antennae. This arrangement gives you the flexibility of adjusting the antennae for the radio although we'd have preferred six antennae like the v3 SKU. After all this is one of the premium routers that TP-Link has to offer.

Speaking of the firmware, we noticed that easy to configure QoS settings were missing but you can add rules under the Bandwidth Control tab to somewhat make up for it. You don't get to choose the priority of a certain kind of traffic but ingress and egress bandwidth from an IP range across a set of ports can be ensured/limited. Or you could simply flash open-wrt but that will make your 5GHz radio to cease functioning and getting that to work is a daunting task. If you want control over antennae orientation then go for the Archer C7 but if you want QoS then there is the similarly priced D-Link 868L for you.

Mithun Mobandas



Performance.....76
Features.....68
Build Quality.....75

Specifications

Wireless LAN Chip: QCA9880+QCA9558; **Memory:** 128 MB; **Protocols:** 802.11 b/g/n/ac; **Bandwidth:** 1750(1300@5GHz +450@2.4GHz) Mbps; **Ethernet:** 4x LAN, 1x WAN, GbE Ports, Without modem; **Warranty:** 3 years.

Contact

TP-LINK India Private Limited
Phone: 1800 209 4168
Email: www.tp-link.in
Website: sales.in@tp-link.com

Cowon EK2

More bang for buck

The 1k or sub 1k price range for in-ear headphones is perhaps the most busy segment, at least in terms of volume. This is where the numbers are, and therefore, this is where manufacturers have and will continue to devote their attention for the foreseeable future. The subject of this review is Cowon's EK2 - an in-ear headphone that might just cannibalise Cowon's own EM1 SKU. If you guys remember the EM1 has been our most recommended budget IEM for a while, so comparisons with the EM1 will be aplenty in this review.

There are a lot of similarities between the two - the specifications, the flat cable and of course the price range. Do they sound different though? Saying they're differently tuned would be stating the obvious. But how different are the EK2s from the EM1s? Not a lot.

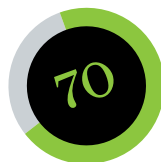


Price
₹1,100

The better quality tips for one provide a better fit and seal. In terms of performance, the EK2 is tuned towards giving you more detail in the higher frequency ranges. In this effort it loses out on some of the body or "fullness" that a well represented mid-range imparts to most forms of music. The EM1 therefore feels more rich but at the same time a shade less precise. If any of you have had the chance to demo the EM1 and found them to be lacking on the bass front, you'll find the EK2s severely lacking - they're not, it's just that true-to-source bass representation often seems below par to most people. Another important distinction between the EK2 and EM1 is that the EK2 seem to be a little more sensitive, so more volume per input of input power.

Nostalgia aside the EM1s still give you bang for your buck if you're on a really tight budget. However, if you have a little more money to spare (only about 150 bucks more), the EK2s will provide a near-proportionate boost in incremental value. They're a worthy purchase just as the EM1 has been.

Siddharth Parwatay



Features.....70
Performance.....70
Value.....68
Build quality.....67

Specifications

Driver size: 10mm; **Impedance:** 16 ohms; **Rated power:** 3mW; **Max power:** 20mW; **Sensitivity:** 103dB (at1mW); **Frequency range:** 20HZ to 22,000Hz; **Cord length:** 1.2m

Contact

Lipap Systems Pvt.Ltd
Phone: 022-29271307
Email: sonu.rawat619@gmail.com
Website: www.cowonindia.in



DTS meditation
Ever meditated through sounds created through DTS Headphone: X Technology?
<http://dgit.in/TheNonLocal>



Smooth traffic
Boston is trying to unclog its streets from traffic by partnering with Waze, pumping data to the Traffic Management center to improve traffic flow <http://dgit.in/WazeTraffic>

Bazaar

Creative Sound Blaster Roar

A new benchmark at this price range

This is one of the few times you're ever going to see a TLDR version right at the beginning of a Digit review. And here it is: the Sound Blaster Roar portable bluetooth speaker is a superlative product. Period.

Now that we've got that out of the way, let's start with a more detailed explanation to make up the rest of this review. First up if you'll direct your attention to the scores, you'll notice that out of all our scoring parameters – Features, Performance, Value etc, the Roar scores most on the features front, and hence that would be the perfect place to begin.

Features

The Roar packs in features – both useful and superfluous – to the hilt. In fact, we haven't seen a competing product that has such a huge laundry list of features. Some of its more impressive features are: the ability to be recognised as a USB speaker on a PC, a 5V 1 A USB out to charge your smartphone thereby doubling up as a portable battery pack, and of course NFC. Other features include microSD card playback for WMA, MP3 and WAV files, an integrated voice recorder



that'll record your calls and audio to the microSD, bass-boost, a one touch loudness amping, and a siren. Phew! There are a few more but we're running out of space, instead lets talk about the design and build quality. The Roar is essentially a rectangular slab and conventionally one would imagine there isn't much that can be done aesthetically with a monolithic structure like that. The product designers have still managed to put in some eye candy with its machined grille and ample chroming on the sides. The speaker feels well built and though it doesn't come with any all-weather certification, it does seem like it could take a beating and a few splashes.



Price
₹14,999



Performance

On the tech front, the Creative Sound Blaster Roar has managed to pack in some interesting innovations with its audio circuitry. For starters the bass driver and two tweeters are independently amped. In addition to these two sets of active drivers you also have a pair of side-firing passive radiators.

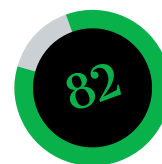
The Roar's performance is neck and neck with the Soundlink mini. The highs are clearly better on the Roar and even percussion heavy tracks such as Brutal Hearts by Bedouin Soundclash sound better. The Bose, however, does manage to produce tighter bass, not that it goes any lower than the Roar.

The mids too are slightly more enhanced on the Bose making it sound warmer in comparison to the Roar. The Roar on the other hand tends to tilt towards a "bright" sound signature. One good thing about the Roar is that the crossover unit doesn't overdrive or distort any of the drivers – that much is expected for a speaker of this quality, but often is an unintentional oversight by manufacturers in order to push more decibel levels out of speakers. The Roar then isn't unnecessarily loud, which is good, but at the same time the mantle of being deceptively loud still remains with the Bose SoundLink Mini. Speaking of which, the only thing that goes against it is its heft. The Roar is roughly twice as big as the Bose Soundlink Mini, but only a little louder in the bargain.

Bottomline

Now for the million dollar question (or rather ₹16k question), should you buy the Sound Blaster Roar? Most certainly yes, even if you have to stretch your budget a little.

Siddharth Parwatay



Features.....	92
Performance.....	78
Build.....	80
Value.....	75

Specifications

Dimensions: 2.2 x 7.9 x 4.5 inches; **Weight:** 1.10kg; **Battery:** 6000mAh Li-ion; **Rated battery life:** 8 hours; **Drivers:** 1 x 2.5", 2 x 1.5", 2 x passive; **Bluetooth Profiles:** A2DP, AVRCP, HFP

Contact

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What's wrong Samsung?

An interesting article talks about how Samsungs design department is stuck in a rut and what's the reason behind it. <http://dgit.in/SamDesSuc>



Android Wear with iPhone

A developer did his magic and made the iPhone work along with the Motorola Moto 360 smartwatch. More here: <http://dgit.in/iWearOS>

Signature Acoustics O16-Live

Concert specialist

Fully open back in-ears aren't easy to come by, so when the O16-Live was delivered to the Test Center, we were eager to try it out. To start with the headphones look distinctive, with the housing on the slightly larger side for 8mm drivers. The cable seems to have a sort of polyurethane sheathing which although not tangle-free is fairly rugged. We hooked up the O16-Live to our Asus Xonar Essence STX and the first thing we noticed is the sound signature is certainly "unique". After the ho hum experience with C-12 Elements last year, this was a refreshing change. The O16-Live is "engineered to evoke the transparency of a live musical setting", and guess what, that does seem to hold true. Vocals take center stage and the soundstage is as wide as can be. Therion's O



Fortuna sounded grand and expansive. At the same time you're not blown away by stellar detail or precision. For reference we had the Fidue A63 handy – an IEM with a similar price tag, but of course, the A63's housing is fully sealed. The difference when switching between the two was the kind you'd feel when swapping between the ATH-A500X and an ATH-MSR7. One is wide and open and the other though precise and detailed, give a more close quarters sort of listening experience. The only drawback – and this isn't a design flaw – is that the O16 Live will not give you much isolation to speak of. They are designed to be used in a quiet environment. Not suitable for your daily train commute. These in-ears are more the kind to be permanently hooked to the Kilimanjaro 2 on your desk, which although portable, never leaves your house either. Should you buy them? If you understand the O16's use-case requirement, then yes go ahead; you'll earn some audiophile street cred along the way as a bonus. But if you're looking for a practical, bang for buck type of proposition you'd do well to look elsewhere.

Siddharth Parwatay



Performance.....	75
Features	65
Value	60
Build	65

Specifications

Driver size: 8 mm; **Impedance:** 17 Ohms @ 1Khz; **Frequency response:** 12 to 22 KHz; **Sensitivity:** 102 dB; **Cord length:** 1.2 mts

Contact

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ASUS ROG Gladius

A quality mouse built for right handed FPS gamers

The Republic Of Gamers or ROG series from ASUS has been known to represent their top of the line gaming products and the Gladius is their newest entrant in the market. Designed with a two tone colour scheme of steel gray over the top and black all around, the Gladius sure looks the part and also feels like one owing to the superior build quality. The mouse is ergonomically designed for right-handed users and buttons are well laid out. Use of patterned rubber on the sides of the mouse provide enough grip while the inclusion of removable cable is a welcome add-on. In fact, ASUS bundles two cables with the mouse – one braided



and the other regular. You also get a carry pouch made from soft cloth for the mouse. As far as the tracking is concerned, we saw that the mouse with its 6400-DPI optical sensor was spot-on at all times and tracked smoothly. Instagibbing with the Rail-gun in Quake 3 was fun and we felt right at home with the Gladius. You also have the ability to replace the mouse buttons with extra buttons included in the box which is quite unique. At ₹4,500, the Gladius is not only a really well built gaming mouse but also a fine performer. We've been using and loving mice like the Roccat Kone XTD and the Razer DeathAdder for quite a long time now and the ASUS ROG Gladius surely makes a rightful place among them. If you're in the market for a decent gaming mouse with just enough customisation options which is also a great all round performer, you can't go wrong with this one. Head here to read our full in-depth review: <http://dgit.in/ROGladius>



Features	71
Build Quality	77
Value for money.....	68

Specifications

Connectivity: Wired; **Tracking:** Optical; **Resolution:** 6400 DPI; **Dimensions:** 126 (L) x 67 (W) x 45 (H)mm; **Weight:** 116 g; **Color:** Steel Grey; **Interface:** USB; **Compatible switches:** Omron D2F and D2FC Series switches

Contact

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Siddhant Sharma



Medical wearable

A new light-powered armband developed by the researchers at the University of Tokyo monitors your vital health stats. <http://dgit.in/MedBand>



I feed tomatoes!

A silly new wearable robot designed by people in Japan feeds the user tomatoes while piggybacking during running. <http://dgit.in/WeirdRobot>

Bazaar



ASUS EeeBook X205TA

Offers impressive value

Features	48
Performance.....	69
Design	40
Value	93

Specifications

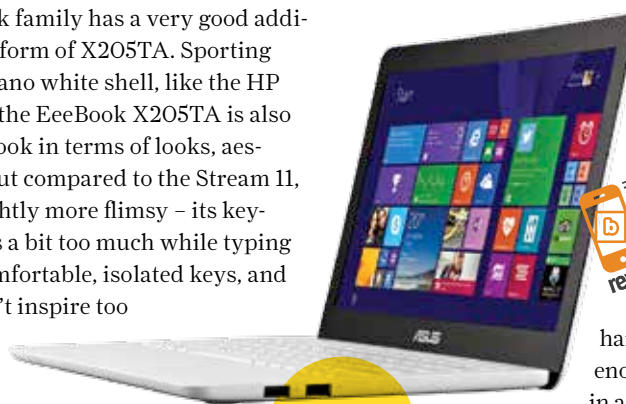
Display: 11.6-inch, anti-glare, no touch, 1366x768 res; **CPU:** Intel Atom Z3735F with Quad-Core Processor (up to 1.83 GHz, 2M); **RAM:** 2GB; **HDD:** 32GB eMMC; **Weight:** 1.24 kg; **OS:** Windows 8.1; **IO ports:** 2 x USB 2.0, 1 x microHDMI, 1 x headphone mic; **Wireless:** Wi-Fi 802.11n + Bluetooth; **Warranty:** 1 year

Contact

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The EeeBook family has a very good addition in the form of X205TA. Sporting a glossy piano white shell, like the HP Stream 11, the EeeBook X205TA is also an appealing notebook in terms of looks, aesthetics, and style. But compared to the Stream 11, this EeeBook is slightly more flimsy – its keyboard deck wobbles a bit too much while typing on its otherwise comfortable, isolated keys, and the touchpad doesn't inspire too much confidence either. The EeeBook's display is good, but just a couple of notches below the HP Stream 11. But the EeeBook's a featherweight at just under 1 kg – easy to carry around and work on.

However, it's in its performance that the EeeBook X205TA redeems itself. It offers over 6 hrs of battery time in our synthetic battery test, that's easily over 9 to 10 hours on a conservative plan. And also



Price
₹14,999

in overall performance, it's a notch higher up the ladder than the HP Stream 11. The EeeBook also offers 500GB of cloud storage (along with 1TB of OneDrive) in addition to its meagre

hardware specs, which is enough for basic computing in a lightweight form factor.

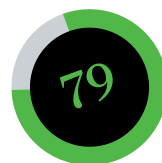
Watching movies, listening to music, working on a few basic apps, that's all you can expect from the X205TA.

For people only concerned with working online, this is a very good investment which sells at an attractively low price – cheaper than most modern smartphones.

Jayesh Shinde

Lenovo ThinkPad X240

Feature-rich, versatile business notebook



Where the ThinkPad W540 we reviewed last month was a workhorse with very good hardware performance, the ThinkPad X240 this month is a more versatile business notebook. It's thick and bulky for a 12.5-inch laptop, but not cumbersome to carry around. It's every inch a classic ThinkPad which can only mean two things. The X240 is built like a tank, with a magnesium alloy chassis that oozes confidences, and rigid metal hinges. Its accompanying keyboard is fantastic to type on, sporting isolated keys with no flex whatsoever. The accompanying trackpoint navigation is as addictive as ever – it takes getting used to, but offers a great alternative to conventional touchpads. Unlike the W540, the X240's keyboard

lacks a dedicated numpad due to its form factor – not ideal for working on spreadsheets.

The laptop's screen is matte, which is great for business usage, but it too suffers from mediocre viewing angles much like the W540. This laptop isn't as fast-paced as the W540, but it's still nippy compared to most business laptops



Price
₹1,02,600

out there. Also, with its 3-hour battery life in our synthetic test, expect over 5 hours on a conservative plan, which is very good. As a business laptop, the X240 comes with Intel vPro, encryption, fingerprint reader, HD webcam and Lenovo ThinkVantage utilities for easy maintenance – all essential business features. If you have the money to buy this, you can't go wrong.

Jayesh Shinde

Features	80
Performance.....	80
Value	70
Design	85

Specifications

Screen: 12.5-inch, no touchscreen, 1366x768 res; **CPU:** Intel Core i5-4300U 2.5GHz; **RAM:** 8GB DDR3; **HDD:** 500GB; **GPU:** Intel HD; **IO Ports:** mini DisplayPort, VGA, 2 x USB 3.0, SD Card slot, Ethernet, ExpressCard slot, 3.5mm audio jack; **Wireless:** Wi-Fi 802.11ac & Bluetooth 4.0; **Webcam:** HD 720p; **OS:** 64-bit Windows 7 Professional; **Weight:** 1.38 kg

Contact

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Mini GTX 960

Mini-ITX system builders rejoice! ASUS has once again launched a miniaturised version of a GPU and this time it's the GTX 960 Mini. <http://dgit.in/Mini960>

Rules of Typography

As there are millions of typefaces available online, here are some rules that you should definitely follow to use them effectively. <http://dgit.in/TypoComm>

Xiaomi Mi4

Did Xiaomi finally get it wrong?



We had first spent some time with the Mi4 in October last year and if you had read the Hands On on the website, you would know that we weren't thrilled with the glossy back. Well, that remains the same. While the Mi4 is a very sturdily built device, which feels premium enough, the glossy back makes it a little slippery.

That said, it is also a small misstep in an otherwise well built device. The metal rim around the side of the phone feels good and it is compact enough to be used with one hand. While the Mi4 does feel slightly heavy when compared to some other smartphones, it isn't heavy enough to really be a problem.

On the build and design aspect, this phone will get a lot of points, whichever way you look at it.

Moving to the display, it is quite warm, with a generous dose of yellow in the colours. While this is an IPS panel, the colours on the display make it seem more like an AMOLED panel. The warmth is quite like what you get on Samsung devices, so the decision would naturally depend on whether you like such displays. It's definitely one of the better displays in this price range.

At ₹19,999, the Mi4 is one of the cheapest Snapdragon 801-powered smartphones you can buy today. Also, that puts it squarely in competition against the OnePlus One, with others like the Lenovo Vibe X2 and Huawei Honor 6 also posing a threat. In terms of pure performance, the Mi4 is

every bit the performer. Remember though, the phone has two performance modes — the balanced mode clocks the processor down to around 300 Mhz per core, while the Performance mode leaves it to perform with all its might. If you're gaming on balanced mode, with a lot of background tasks, you may see some lags, but the performance mode deals with high end gaming and multitasking well.

For regular usage, you may want to keep the Mi4 at the Balanced mode, as this does offer a higher battery life, but switch it back to Performance later.

What's disappointing though is that with above average gaming and web browsing, the Mi4 couldn't last us through the day. In fact, we could never really get the phone to last more than about 10 hours at best. On our battery test, the Mi4 can last for just below 7 hours, while competitors like the OnePlus One and Huawei Honor 6 last 10 hours each.

It does have fast charging though and doesn't take much time to charge, with our only issue being in the fact that the charger itself malfunctioned a few times. That of course was a device specific issue.

Next the camera. Images taken by the Mi4 came overexposed sometimes. That said, the focus dot, which doubles up as the exposure control will help you fix this. The fact that it shows you how the picture is going to be in real time allows you to take good shots. If you're more of a point-and-shoot kind of camera user, then the Huawei Honor 6 and OnePlus One both present better options for you. The Mi4 on the other hand will be loved by camera enthusiasts.

To conclude, the Mi4 is definitely a good smartphone, but would you really want to spend ₹20,000 on a 16GB smartphone? The 64GB variant of the device costs ₹23,999, which again makes it more expensive than the OnePlus One. As mentioned above, there's no denying that it is a good phone, but if you're looking for the absolute best device in this price segment, you should be going for the OnePlus One.

Prasid Banerjee



Features	83
Performance.....	79
Design	76
Value	70

Specifications

Display: 5 inch 1080p;
Processor: 2.5GHz
 Qualcomm Snapdragon 801; **RAM:** 3GB; **Storage:** 16/64 GB; **Camera:** 13MP rear, 8MP front; **Battery:** 3100 mAh; **OS:** Android 4.4.4 with MIUI 6

Contact

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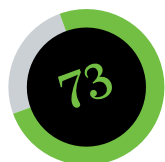
Nvidia lawyered

The GTX 970 memory debacle has led to Nvidia getting hit with a lawsuit over its misleading claims about the cards performance. http://dgit.in/Law_GPU

Mice upgraded

Researchers found that injecting human DNA in embryos of mice gave them bigger brains. This may provide a breakthrough in Alzheimer's. <http://dgit.in/BigMiceBrain>

Bazaar



Features 71
Build 75

Specifications

Chipset: Intel X99;
Memory support: 4x2800(OC)MHz upto 64GB; **LAN:** Intel Gigabit Ethernet; **Audio:** ALC1150 7.1; **SATA:** 10x SATA III; **Expansion:** 4x PCIe X16(x16+x8+x16+x8); **Dimensions (LxWxD):** 305 mm x 244 mm; **Warranty:** 3 years.

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Gigabyte GA-X99-UD4

An affordable quad-SLI (4 physical cards) board

It's been a while since we've seen an X99 motherboard since their launch, the last one from Gigabyte was the X99-SOC-Force and compared to that this X99 motherboard is more affordable.

Just because it's affordable doesn't mean they've cut a lot of corners, you still get Gigabyte's Ultra Durable technology which piles on gold plating onto connectors across the motherboard and then you have the solid state capacitors and chokes which are also high-grade and staple across brands. The heat sinks near the sockets aren't too huge to get in the way of most coolers and the RAM slots are at the same distance as other X99 motherboards. Higher end SKUs tend to be used with liquid cooling so a wide clearance is not



Price
₹29,000
(+Tax)

necessary. There are two M.2 slots stacked with the lower slot having x1 PCIe lane for Wi-Fi adapters and the other slot with x2 PCIe lanes which is more suited for storage drives. Speaking of Wi-Fi adapters, the board has a bracket onto which you can affix the adapter's antenna. The I/O shield has gotten some attention with this

board. There's padding which quite a few other enthusiast segment boards have but the LED is something that hasn't been seen for a long time. We found one 790i motherboard with the same feature and this is from six years back.

This may not be the cheapest X99 board for you to jump onto the new platform but it definitely seems to be the cheapest X99 board for multi-GPU.

Mithun Mobandas

HP Stream 11-d203TU

Good for on-the-go cloud connectivity

Inexpensive, lightweight notebooks (netbooks?) are making a comeback, and they're getting better with each passing year. The HP Stream 11 notebook is testimony to the fact. The notebook has several unique features: a 3G SIM card slot for on-the-go cloud connectivity, fan-less unibody shell design, and 1TB of free online OneDrive storage courtesy of bundled Microsoft Office 365 Personal subscription.

The HP Stream 11 notebook is thin and light, as is expected from its 11-inch form factor. Its screen's anti-glare coating does a good job of diffusing light falling on it, but the screen's overall quality is strictly OK. The notebook's built well, looks premium and feels nice to touch. It has a good keyboard to type on with chiclet-styled, isolated keys, but it isn't

without flex. The palmrest is wide, which we liked, and the touchpad isn't too bad either. The built-in webcam atop the Stream 11's screen bezel is good enough for Skype or Google Hangout. Audio performance is also good here.

With a low-powered processor, this machine can't be compared to give the same performance as more expensive competitors. But it offers good battery life,

fast-load times thanks to its flash storage, and a great way to always stay connected online through 3G cellular networks. However, make no mistakes, this is a basic laptop not meant for heavy-duty, CPU-intensive tasks. It's good for Office productivity on-the-go or taking notes in class. Chromebook killer? Of course.

Jayesh Shinde



Price
₹19,990



Features 58
Performance 65
Design 50
Value 72

Specifications

Display: 11.6-inch, anti-glare, no touch, 1366x768 res; **CPU:** Intel Celeron N2840 - 2.16 GHz upto 2.58 GHz; **RAM:** 2GB; **HDD:** 32GB eMMC; **Weight:** 1.27 kg; **OS:** Windows 8.1; **IO ports:** 2 x USB 2.0, 1 x HDMI, 1 x headphone mic; **Wireless:** Wi-Fi 802.11n + Bluetooth; **Warranty:** 1 year; **Battery:** 3-cell Li-ion

Contact

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Pebble in colour

A new and thinner Pebble smartwatch with a colour display is expected to launch soon. More here: <http://dgit.in/PebbleColour>

tumblr.

Tumblr playing spoilsport

A recent report says that Tumblr hides or blocks various types of searches including torrent and adult related searches as well. <http://dgit.in/KillJoyTumblr>

HTC Desire 526G+ Dual SIM

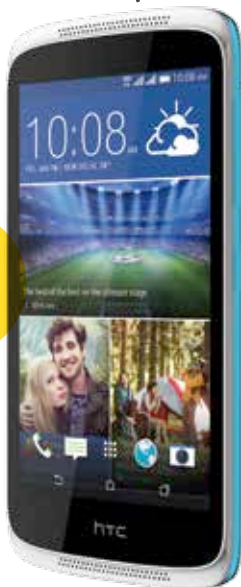
Good budget phone debut



The HTC Desire 526G+'s ergonomics reminds us of the old HTC flagship, the One X. The HTC Desire 526G plus leaves the regular slab like design behind; instead the 4.7 inch display is slightly raised on the phone and looks like it has been wedged in between the two speaker grills. The overall design of the phone is a bit unorthodox which gives the phone a very distinctive look unlike the regular slab like designs.

The HTC Desire 526G+'s 1.66GHz MediaTek processor is the same as the one used in the Micromax Canvas Nitro we reviewed earlier. The

Price
₹11,400



smartphone is able to create a nice balance between performance and battery life, which is commendable. The 4.7-inch display's 960 x 540p resolution is lower than HTC's rivals who have 720p displays.

Beneath the display, the phone houses its loudspeaker and the audio quality via headphones is pretty decent as well. Jumping to the UI, you will encounter the familiar Sense UI HTC uses in its smartphones. Overall, the UI feels smooth and if you have used an HTC smartphone before then you will totally feel at home.

Its 8MP camera with flash takes decent pictures, comparable to the Asus Zenfone 5. Video quality is a similar affair and the smartphone can shoot upto 1080p videos @ 30fps. To sum up, the HTC Desire 526G+ Dual SIM is a good phone, not the best one in its category, but still a good buy overall.

Hardik Singh



Features	74
Performance.....	67
Value	75
Design	68

Specifications

Screen: 4.7-inch, 960x540 resolution; **CPU:** Octa-core 1.7GHz; **RAM:** 1GB; **OS:** Android KitKat 4.4.2; **Camera:** 8MP (rear), 2MP (front); **Wireless:** Wi-Fi 802.11n, Bluetooth 4.0; **SIM:** Dual; **Storage:** 16GB; **Battery:** 2,000 Li-ion; **Other features:** FM Radio, 3.5mm jack, microUSB port; **Weight:** 154g; **Warranty:** 1 year

Contact

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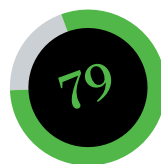
Lenovo A6000

64-bit comes to the budget segment

The A6000 is a quintessential budget smartphone, priced at ₹6,999. There's no groundbreaking design innovation here, but Lenovo has achieved somewhat of a balance between the size, weight and material used. While it is essentially plastic, the matte-ish finish on the back, along with the slight curve near the rear edges gives it a premium feel for the price.

At 5 inch, 720p is just enough to call a display good. That said, Lenovo has cut a few corners here, with the lack of Gorilla Glass. This not only makes the display weaker, it also diminishes overall touch experience. The display feels a bit cheap.

The performance of this smartphone is what makes it the quintessential budget



Features	81
Performance.....	77
Design	75
Value	86

Specifications

Display: 5 inch 720p; **Processor:** 1.2 Ghz Qualcomm Snapdragon 410; **RAM:** 1GB; **Camera:** 8MP rear, 2MP front; **OS:** Android 4.4.4 with Vibe UI; **Battery:** 2300 mAh; **Storage:** 8GB, expandable to 32GB

Contact

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Price
₹6,999

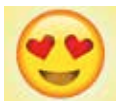
device, but one that belongs to the current generation of smartphones. The performance of the Lenovo A6000 is much better than the Moto E and it is farther ahead of the Redmi 1S than we thought it would be.

The 8MP rear camera took some really good pictures under outdoor sunlight and even indoors, under fluorescent lighting. That said, it still couldn't outdo the Xiaomi Redmi 1S. Images taken through the Lenovo A6000 came out a bit subdued, as compared to the Redmi 1S.

The major disappointment here was the battery. On our battery test, the phone came out behind the Moto E, but ahead of the Redmi 1S. On regular usage, we had to charge the phone at least twice.

Overall, the Lenovo A6000 is good but not the best that this segment can offer, so if you're not in a hurry, wait for other companies to launch their devices.

Prasid Banerjee



NSFW emojis incoming

Sexting is all the rage these days and we don't have the right emojis to convey sexts. But that's about to change soon. <http://dgit.in/PervWink>



Maps Vs. Earth

If you're someone who has always wondered what exactly is the difference between Google Maps and Google Earth, read this: <http://dgit.in/MapsEarth>

Bazaar

Tonino Lamborghini 88 Tauri

How much is too much?

How much should a high-end smartphone cost? Well, not ₹4,00,000 for sure. In fact, no smartphone should ever cost this much. Try telling that to the guy who made the Tonino Lamborghini 88 Tauri. It makes even the iPhone 6 Plus look like a budget device. It's an ultra-luxury smartphone, which most of us will only ever see in pictures.

Manufacturers often use metal, wood and many other things for a phone's body, and we call many of these premium. The ultra-luxury segment though is a whole new ball game. The 88 Tauri is made using calfskin leather and automotive grade stainless steel, which is gold plated. To say that the phone's design is premium would be a massive understatement.

There are a lot of automobile-like design elements. For example, the noise cancelling microphone has been put in a headlight shaped casing on the bottom of the phone, while the flaps for the SIM cards and charging port open like car doors. Moreover, the overall design draws a lot of inspiration from Lamborghini automobiles that, like the phone, we see in pictures.

One thing you have to give though is that the phone is built like a tank. It's heavy, yes, but sturdier than almost any other phone that you've used till date.

The 1080p display on the 88 Tauri is more than enough for the regular smartphone user. The phone isn't meant for the regular smartphone user though is it? A Samsung-like 2k display would have been more than welcome on a phone like this. The lack of a UI anyway makes the display seem dull for an ultra-luxury product. While we're on the UI, what's up with the stock Android UI on such a product? While almost every manufacturer is working on creating good-looking UIs to achieve product differentiation, this phone comes with a regular stock UI. In fact, the little change that has been made to some icons is pretty ugly. There's nothing that you get on that front, which is a massive disappointment from a phone like this.



Price
₹4,00,000



Remember how we said this phone is not just about using premium materials for the body? Well, the 88 Tauri runs on a Snapdragon 801 SoC, clocked at 2.5 GHz, along with 3GB of RAM. That puts it right up there with the most powerful devices in the market today. The same is also reflected in its benchmark numbers and overall performance. The phone shows no lags or stutters on the most resource intensive task. Of course, that is no surprise, considering the specs.

What is surprising though is that it gets lower benchmark scores than the likes of the Moto X (2nd Gen). It doesn't affect the overall performance, of course, but if you go strictly by the numbers, this phone is below many of the flagships we have in the market today.

Where it matches up to and even outdoes some flagships though is in the battery department. The 3400 mAh battery lasts for 14 hours on our battery test, which is just two hours short of the Galaxy Note 4.

Another area where the 88 Tauri got things right is in the camera. The 20MP rear snapper takes great images under optimal light conditions and performs well even under low light. That said, it still can't beat the likes of the Galaxy Note 4 and iPhone 6. Why do we say that? Because in this day and age, taking good shots is not enough. The auto-focus on the Tauri is a little slower than what we would have liked and the both the front (8MP) and rear cameras sometimes struggles with fluorescent lighting.

There really can't be a 'to buy or not to buy' end to this review. If you have the money to buy this phone, then you're really not going to read a review to do it. Moreover, it is not a bad phone either. If this were a flagship device, we would all have liked it. It's worth noting that the only thing this phone really has over any other flagship phone today is the build quality. Everything else is pretty much what any other flagship phone (that costs less than a fourth of this phone) can and does offer.

Prasid Banerjee



Features	85
Performance	75
Design	70
Value	20

Specifications

Display: 5 inch 1080p;
Processor: 2.3GHz
Qualcomm Snapdragon
801; **RAM:** 3GB; **Storage:**
64GB; **Operating System:**
Android 4.4.4; **Camera:**
13MP rear, 8MP front

Contact

Lamborghini Mobile
Phone: NA
Email: NA
Website:
lamborghinimobile.com



Inbox for businesses

Google will now offer Inbox to business users soon. More here: <http://dgit.in/InboxBiz>



Great movie based games

Check out this list of amazing Android games that are based on movies. You'll find something good for sure <http://dgit.in/AndMov>

STREAMING STALWARTS

Should you go for the Slim sticks or the fat boxes?

Mithun Mohandas
mithun.mohandas@digit.in

Media players have had quite the tumultuous affair with TVs. Gone are the days when buying a home theatre system meant getting a TV, optical media player, digital media player and then focus on the sound system which is in itself an entirely arduous task. Times have changed and these days the average TV has support for USB based digital media playback and you'd still have

to invest in an optical player. That part isn't going to change for a while, but there's a whole new form of digital distribution on the market – streaming. No, we aren't talking about plugging in an ethernet cable and watching the latest episode of Game of Thrones. Now, we'd rather stream, sling, fling, cast, airplay media files straight from a mobile device.

These streaming receivers come in all shapes and sizes; you have slim sticks which are about two fingers wide and power themselves via any micro-USB phone cables connected to a port

on the TV itself (the amperage varies but it generally tops out at 1.5 Amps) and then there are the normal lunchbox sized streaming players that are powered via wall socket adapters and have a lot more juice to

work with. Naturally, the latter, given the power made available to them is capable of having a lot more connectivity options and the antenna is capable of capturing more of the transmitted signal and thus, has much better



Roku's 3500R requires a VPN to make the most of it



What is HTTP/2?

A new version of the HTTP protocol was published as a draft by the IETFForce, soon to replace it. <http://dgit.in/HTTP2Prot>

Recyclable 3D filament

Dimension Polymers is trying to develop recycled plastic filaments that can be used in 3D printing <http://dgit.in/3DPrntFila>

Streaming Devices

range. Also, high-powered SoCs can run without being underclocked on boxes while the sticks are generally limited to 600 MHz or so.

The Sticks

Among the competition were the Roku Streaming Stick 3500R, Google's Chromecast and quite a lot of EZCast based dongles. Ematic's Mediabeam, Merlin-Digital's Screencast and Cubetek Air Streamer were in the contention. We'd have liked to include Amazon's Fire TV Stick as well since it is quite capable and would have easily given most of the competition a run for their money but we couldn't manage to get our hands on one. Needless to say, we will try to get one just to see how well they stack up against the big guys and the not so popular ones.

Roku's 3500R is an unusual entry in this test since the service is not available in India but that wouldn't stop anyone from investing in a VPN service to unlock its full potential. The sheer amount of content at your disposal is something that only the Amazon Fire Stick can compete with. However, these are all paid services but you do have some good free services like Pandora, PBS, TED, Crackle etc. The device is accompanied by a physical remote that runs on RF so there is no need to point it directly at the device. If that isn't enough, there are apps available across all platforms which not only allow you to stream content but also act as remotes themselves. So there is the element of flexibility. A little problem with the apps are that they're region restricted so you'll have to use a service like Evozi to get the APK file.

Chromecast was one of the first on the scene and is in need of

HOW WE TESTED

Given the power available to these streaming receivers, it was absolutely unfair to compare a streaming stick to a streaming box. There was no chance that the former could compete with the latter on performance or features which is why we broke them down into these two categories. Both were scored on mostly the same set of parameters except for when those parameters wouldn't be applicable. Here's how we set up the testing methodology.

Display - The Alienware OptX AW2310 3D made for a suitable candidate for the display which needed to support 720p and 1080p.

Wireless Router - TP-Link's Archer C7 is a fairly priced 802.11ac router and for this test we needed to ensure that the router should be dual band with a high enough bandwidth. The C7 can go all the way upto 1300 Mbps on the 5 GHz band and 450 Mbps on the 2.4 GHz band.

Mobile Devices - HTC's One M8 was used to test stuttering during Miracast and to playback via Wi-Fi direct. A device with a powerful SoC was needed since most of the processing during Miracast happens at the transmitting device and not at the receiver.

LG/Google Nexus 4 was used in cases where the HTC would have failed to connect.

Apple iPod Touch 5th Gen was used to test out Airplay.

Media Server - Plex is a decent media server which works across all devices regardless of what platform it may be installed on. Our test Plex server was hosted on a laptop which was connected to the router via Ethernet to eliminate any bandwidth sharing which might have impeded the wireless performance.

The devices were restricted to the TP-Link Archer C7 to ensure bandwidth was always available. The channels on the router were selected to reduce interference with other Wi-Fi devices in the area. Most of the transmission was via the router except when media playback had to occur via a Plex media server.

We tested the different media formats on each system along with the distance from which each device could effortlessly receive the stream. We looked at the app on mobile platforms and the functionalities that they had and we also scored the devices based on how easy it was to navigate through the interface.

Now most of these devices do not support all the features but can easily do so by use of an app on either the device or on your media server. We included these in the features since these were easy to implement. Any workaround that would have required a steep learning curve was not used. The tests not only involved feature comparisons but also compatibility across media formats.

a much needed upgrade. There are quite a lot of apps on the Play Store and the iOS App Store which support the Chromecast so if you wish to watch Netflix then you need to download the

app and then cast from your phone to the Chromecast. So for each new service you wish to watch you'll need to download a new app which makes the experience a little painful

since a single point of access is preferred over this approach. Then if you are casting from the Chrome desktop browser, you are limited to 720p which was low even back when it launched 18 months ago.

EZCast is a Chinese jack-of-all-trades brand which has incorporated every single streaming technology into their dongle so it's a pretty good deal if you want a simple streaming device. There is the obvious limitation that they don't have any tie-ups with studios to bring exclusive content to their devices. Moreover, since the software isn't open-source there lies a major disadvantage that custom firmware does not exist. Also, there are no add-on channels for the EZCast dongles that the Roku and the Chrome-



Neo X7 is the slightly lower powered cousin of the X8-H Plus



Class	Dongle			Box					
Brand	Roku	Cubetek	Ematic	Google	Merlin	Minix	Minix	iRevo	Raspberry
Model	3500R	EZ Cast	MediaBeam	Chromecast	HDMI Streamer	Neo X7	Neo X8-H Plus	Smart Smart TV	Pi 2 Model B
Price (₹)	5,113	3,100	2,720	2,999	3,800	14,990	22,990	8,499	3,500
Performance	30	60	60	70	60	90	100	20	NA
Features	67	72	72	60	72	112	112	75	NA
Value for money	29	55	65	60	45	19	13	16	NA
Build quality	50	40	45	50	40	80	80	40	NA
Overall	46	63	65	64	62	88	91	42	NA
Player Features									
Proprietary/ Open Source	Proprietary	Proprietary	Proprietary	Proprietary	Proprietary	Proprietary	Proprietary	Proprietary	Open Source
GUI Based on	Roku	EZCast	EZCast	ChromeOS	EZCast	Android/Kodi	Android/Kodi	Android	OpenELEC
Voice Search	N	N	N	N	N	Y	Y	N	Y
CEC	N	N	N	Y	N	Y	Y	N	Y
Channels	Y	N	N	N	N	Y	Y	Y	Y
Video Library	Y	N	N	N	N	Y	Y	Y	Y
Audio Library	Y	N	N	N	N	Y	Y	N	Y
SAMBA	N	N	N	N	N	Y	Y	Y	Y
Interfacing Options									
Digital Video Out	Y	Y	Y	Y	Y	Y	Y	Y	Y
Analog Video Out	N	N	N	N	N	Y	Y	Y	Y
Digital Audio Out	Y	Y	Y	Y	Y	Y	Y	Y	Y
Analog Audio Out	N	N	N	N	N	Y	Y	Y	Y
Protocols Supported									
Miracast	Y	Y	Y	Y	Y	Y	Y	Y	Y
Airplay	Y	Y	Y	N	Y	Y	Y	N	Y
DLNA	N	Y	Y	Y	Y	Y	Y	Y	Y
MHL	N	N	N	N	N	N	N	N	N
Split Screen	N	N	N	N	N	N	N	N	N
Remote Features									
Physical Remote	Y	N	N	N	N	Bought Separately	Bought Separately	Y	N
Android APP	Y	Y	Y	Y	Y	Y	Y	Y	Y
iOS APP	Y	Y	Y	Y	Y	Y	Y	N	Y
WP APP	Y	Y	Y	Y	Y	Y	Y	N	Y
Desktop APP	Y	Y	Y	Y	Y	N	N	N	N
APP Features									
Voice Recognition	N	N	N	N	N	Y	Y	N	Y
Phone Camera Streaming	N	Y	Y	N	Y	Y	Y	N	N
Browser	N	Y	Y	Y	Y	Y	Y	Y	Y
Document Cast	N	Y	Y	N	Y	Y	Y	N	Y
Internet Radio	Y	Y	Y	N	Y	Y	Y	N	Y
Game Streaming	N	Y	Y	N	Y	Y	Y	N	Y
Hardware									
SoC	BCM2835	AM8251	AM8251	DE-3005-A1	AM8251	RK3188	Amlogix S812	NA	BCM2836
CPU	ARM11	Cortex A9	Cortex A9	NA	Cortex A9	Cortex A9	Cortex A9	Quad Core	Cortex A7
CPU Clock	600 MHz	600 MHz	600 MHz	NA	600 MHz	1.6 GHz	2 GHz	1.5 GHz	900 MHz
GPU	Videocore IV	NA	NA	NA	NA	Mali 400	Mali 450	NA	Videocore IV
RAM	512 MB	256 MB	256 MB	512 MB	256 MB	2 GB	2 GB	1 GB	1 GB
Memory	256 MB	128 MB	128 MB	2 GB	128 MB	16 GB	16 GB	8 GB	MicroSD
Wi-Fi	802.11n	802.11n	802.11n	802.11n	802.11n	802.11n	802.11ac	802.11n	802.11n
Bandwidth	NA	150 Mbps	150 Mbps	150 Mbps	150 Mbps	150 Mbps	433.3 Mbps	150 Mbps	150 Mbps

Class	Dongle	Single	Single	Single	Single	Box	Dual	Single	Single
Single/Dual Band	Single	Single	Single	Single	Single	Dual	Dual	Single	Single
Accessories									
HDMI Extender Cable	N	Y	N	Y	Y	Y	Y	Y	NA
HDMI Female-Female Adapter	N	N	N	N	Y	N	N	N	NA
USB-USB Micro Cable	Y	Y	Y	Y	Y	Y	Y	N	NA
USB/F-USB Micro Cable	N	N	N	N	N	Y	Y	N	NA
Power Adapter	Y	N	Y	Y	N	Y	Y	Y	NA
Antenna	N	Y	Y	N	N	Y	Y	Y	NA
Performance									
Normal render distance	3 m	6 m	6 m	7 m	6 m	9 m	10 m	2 m	8 m
Miracast render distance	1 m	6 m	6 m	6 m	6 m	9 m	10 m	1 m	7 m
Supported Resolutions									
720p	Y	Y	Y	Y	Y	Y	Y	Y	Y
1080p	Y	Y	Y	Y	Y	Y	Y	Y	Y
2K	N	N	N	N	N	Y	Y	N	Y
4K	N	N	N	N	N	Y	Y	N	Y
Interface Options									
Quick Setup	Y	Y	Y	Y	Y	Y	Y	N	Y
Advanced N/W	N	N	N	N	N	Y	Y	Y	Y
Customisable Menu	N	N	N	N	N	Y	Y	Y	Y
Allows Favouriting	Y	N	N	N	N	N	N	Y	Y
File Explorer	N	Y	Y	N	Y	Y	Y	Y	Y
Skinning	Y	N	N	N	N	Y	Y	Y	Y
Pause while navigating	Y	N	N	Y	N	Y	Y	Y	Y
Dynamic Range Control	N	N	N	N	N	Y	Y	N	Y
Subtitle settings	N	Y	Y	N	Y	Y	Y	N	Y
Format Compatibility (Audio)									
MP3	Y	Y	Y	Y	Y	Y	Y	Y	Y
WMA	N	Y	Y	Y	Y	Y	Y	Y	Y
OGG	Y	Y	Y	Y	Y	Y	Y	Y	Y
WAV	Y	Y	Y	Y	Y	Y	Y	Y	Y
FLAC	Y	Y	Y	Y	Y	Y	Y	Y	Y
Format Compatibility (Image)									
JPEG	Y	Y	Y	Y	Y	Y	Y	Y	Y
BMP	Y	Y	Y	Y	Y	Y	Y	Y	Y
PNG	Y	Y	Y	Y	Y	Y	Y	Y	Y
GIF	Y	N	N	Y	N	N	N	N	N
TIFF	N	Y	Y	N	Y	Y	Y	N	Y
Format Compatibility (Subtitles)									
SRT	Y	Y	Y	Y	Y	Y	Y	Y	Y
SUB	N	N	N	N	N	N	N	N	N
SMI	Y	N	N	N	N	N	N	N	N
SSA	Y	Y	Y	Y	Y	Y	Y	Y	Y
TXT	N	N	N	N	N	N	N	N	N
Format Compatibility (Filesystems)									
FAT16/FAT32	NA	NA	NA	NA	NA	Y	Y	Y	Y
NTFS	NA	NA	NA	NA	NA	Y	Y	Y	Y
HFS/HFS+	NA	NA	NA	NA	NA	N	N	N	N
EXT3	NA	NA	NA	NA	NA	N	N	N	Y

Riding a suitcase?

Coolpeds has built an electric scooter that zooms around at 12.4 mph, and also works as a suitcase <http://dgit.in/Coolpeds>

Free Office 365

Colleges that have purchased Office for faculty, makes the students eligible for a free service of Office 360. <http://dgit.in/FreeOff365>

cast have access to. However, with compatibility across all streaming protocols you come to the realisation that there are workarounds for these which means you don't feel disadvantaged. There are apps for all mobile platforms and one for the desktop as well. Even the hardware is the same across all dongles so picking an EZCast dongle comes down to whether it has an external antenna coupled with the accessories that each manufacturer is giving away with them.

The Stones

The not so inconspicuous cousin of the streaming sticks are the boxes which outclass the sticks when it comes to features and processing power. We ended up with two products from Minix, a Hong Kong based company that makes Android based TV hubs. Then we had the iRevo, an Indian brand that launched a product without any fanfare last year. And lastly, we have the Raspberry Pi 2 which we threw into the mix just to see how well it fared. Since this was something we built, it would be unfair to score the Raspberry Pi against the others which is why it was put in purely for representational purposes. We missed out on the Fire TV, Google TV and Apple TV in the boxes category but it didn't seem to be a poor comparison given the hardware we had at hand.

iRevo SMART TV has something unique that none of the other contenders have. The UI they've built though slow at times has Indian content which was relevant to us since it added up to a higher ROI (Return On Investment). The remote has a built in Gyroscope which works wonderfully across the interface. The UI seemed as if it were in a prototype phase and there

were advertisements all over the place. Watching adverts in between TV shows and movies is bothersome and it isn't an element that we wanted to see on the interface as well. It's a good device that could have been a lot better if they'd included more than just two USB ports on the rear. The firmware is Android

KODI which by far is the best option. Since you do have access to the underlying Android OS you can fiddle with all sorts of settings and are not restricted as was the case when we checked out the Fire TV a few months back. Minix doesn't provide an airmouse with the device (just an IR remote) but you can buy



Make your own streaming device with Raspberry Pi 2 and KODI

based so you can chuck all of that and run whichever apps you fancy.

Minix's Neo X7 and the more recent X8-H Plus turned out to be completely out of the ordinary. The hardware is way ahead of the competition but the cost seems to be a hindrance to the device gaining mass appeal. It has a card reader, OTG port, three USB ports, a detachable antenna, ethernet port and provision for analog and digital A/V output. It's build quality is by far the best we have seen in this test. The analog A/V output is obtained from the audio jack which is a CVBS port once you force the firmware to push analog signals. It runs on Android with a custom skin on it and the best thing about it would be that it has an installation of KODI(XBMC is now known as KODI) on it. So you have a choice between sticking to the Minix UI or switching to vanilla android or running

Neo A2 separately which turns it into a console of sorts. The remote being an airmouse has a gyroscope, microphone and a qwerty keyboard on the rear.

The Barebones

Raspberry Pi 2 Model B was thrown in just to see how a plain KODI installation plays against the rest of the competition. This, however, requires some work but you have a lot more flexibility at the end of it just like any Linux installation. But if that doesn't do it for you, then when Windows 10 rolls out each RPi 2 gets a lean version of the OS for free. We attached a TP-Link TL-WN725N 150 Mbps Wi-Fi adapter to the RPi 2 and used a 32 GB Sandisk Ultra MicroSD card for the OS image. Installing Piracast makes the RPi 2 capable of Miracast but this plugin is still being perfected so performance isn't great at the moment. Moreover, Piracast only works with the aforementioned TP-

Link dongle as that's the only one the programmer got to play with. KODI does have Airplay support straight out of the box and if you were to spend a little more to get the Skype SDK for linux then you can run Skype as well. So if it were upto us nerds to look at all that we have at our disposal, it would be very difficult to pass on the RPi as a complete package.

Build Quality

Not much can be said about the dongle which were designed in a similar fashion. EZCast has a hardware specification for their dongles and all manufacturers have done nothing to fiddle around with the hardware except for Cubetek and Ematic who have attached an external antenna on the device. So internally the dongles are exactly the same. The new Chromecast devices are known to heat up quite a bit so you might end up seeing your Chromecast shut down due to overheating an awful lot many times but YouTube does have plenty of videos where folks have modified heatsinks and antenna hacks to improve the device. Except for the heating issue, the device is quite well built. Among the boxes, the iRevo was very lightweight and after opening the box we noticed that the PCB occupies a very small area inside the device. This does mean there is a lot more airflow but we prefer a compact device. Minix's devices were all built the way we'd like other devices to be. The boxes were weighed down with heavy base plates and the X8-H Plus has rubber feet. Both of these combined make it sturdy and stay where you place them. Add to this the fact that the antenna is detachable and you can extend/swap it which makes it easy to hide away.

Dying Light Special Edition

Fans of zombie related games this one is for you. You can now buy a special edition of Dying Light for a measly sum of \$387,000



GTA V delayed again

Rockstar announced that it'll be releasing GTA V for the PC on 14th April now, a month later than promised.

Streaming Devices

The Quirky Protocols

Miracast has been around for quite a long time and has been integrated into Android 4.2+ and Windows 8.1 which means all you need to do is be on the same network and you should be able to stream from A to B with ease. The reality is slightly different, Miracast doesn't work across all devices. We noticed that the HTC One M8 had quite a lot of issues mirroring itself



Google Chromecast

than the Nexus 4. Also, there is this major drawback while playing media off the internet on your mobile device which is then Miracast to your TV, not enough bandwidth. Most of these dongles are designed with a 150 Mbps Wi-Fi adapter so a mobile device has to get content wirelessly, then render it after which it is compressed and sent over the same Wi-Fi radio to the dongle. This effectively halves the bandwidth available for each operation and that makes the viewing experience cumbersome. Airplay on the other hand, simply tells the device where to fetch the media from, i.e. it sort of sends a URL so the media isn't hopping onto your phone, iPad or iPod and then over to the TV. This makes it less prone to losing packet data, however, the protocol is only officially supported on Apple devices which adds to its woes. DLNA is still the way to go, the protocol is a lot more standardised so you can expect two

devices that support it to work without any quirks, unlike Miracast. Hosting a media server is by far the best way to stream media across multiple devices because pretty much every platform has an app. DIAL (Discovery And Launch) is a relatively new protocol developed by YouTube and Netflix which had been previously implemented on the Google Chromecast. There aren't many devices that support this protocol which makes it seem as if it is heading into an early grave. Even the Chromecast has ditched DIAL in favour of mDNS (Multicast Domain Name System) which works in a similar

Configuration service akin to Apple's Bonjour and Avahi.

Winners

Owing to the lack of competition in this comparison test we're awarding only one product from each category. These awards are based off their overall weighted scores. We weighed performance and features the highest with the factor of build quality and value for money coming in much lower in

the scale. The results were hardly surprising.

Stick Ematic Mediabeam

EZCast dongles might not have any curated content but with



Ematic Mediabeam

the number of protocols being supported on this one piece of hardware, they were neck-and-neck with the Google Chromecast. The Chromecast has channels with curated content but most of them are region locked and getting them to work here requires a little extra investment which vastly reduces the value for money factor. We're of the opinion that the Amazon Fire Stick, if it has been a competitor, might have suffered a similar fate in our tests. The Chromecast is a much better performer while the Ematic dongle

would start losing packets and end up looking fuzzy when you started to move around with the mobile that was casting. At the end of the day, from among all the EZCast dongles we tested, the Ematic scored higher because of the external antenna helping it out in an ever so miniscule manner and the fact that there were more accessories with the dongle that gave it an edge over its comrades and won it the **Best Buy Award**.

Box Minix Neo X8-H Plus

The moment we took out the Neo X8-H Plus out of the packaging and went over the specifications, we knew it was going to win the **Best Performer** award and it did. The manufacturers took a high-powered SoC and slapped on it a choice of interfaces. Thus, giving the consumer the flexibility of picking whichever interface they are most comfortable with. Moreover, the Neo A2 mouse that is clubbed with these devices makes it into a game console of sorts. All of this is packaged in a well built compact package and it performed really well from even 10 meters away. And that's the farthest distance that someone would end up watching their TV from. The price that we've got here is that of the Minix Neo X8-H Plus clubbed with the Neo A2 air mouse but you can find the same package available for around 15K online and that only builds the case for the Minix Neo X8-H Plus. It's slightly low powered variant, the Neo X7 isn't a bad purchase either and you'll only notice the difference when you're playing games. These devices support 2K and 4K media playback so when these resolutions do achieve mainstream popularity you won't need to grab another media player. **4**



Minix Neo X8-H Plus

Hidden tech

We introduce you companies working behind the scenes to enable all your everyday tech

**Why is security ignored?**

People ignore the most important things with their own security being one of them. Head here and learn why: <http://dgit.in/NoSecurity>



The future of e-commerce

We chat with Jeremy King who has led product, engineering, and web ops teams charged with developing Walmart's online business on a global scale as the company moves to the next generation of e-commerce

◀ **Jeremy King, Senior Vice President and Chief Technology Officer of Global e-Commerce at Walmart**

Team Digit
editor@digit.in

Q Assuming that Walmart is going to bring in retail stores to India sometime in the future, in what way will the website start off? We've already seen Best Price, Walmart's wholesale presence here, will it be similar?

Jeremy: We don't have any plans now to enter the Indian market. We have 10 major websites that are integrated in the various forms around the world. The major businesses are pretty well integrated digitally. So, grocery for example, in the UK is connected directly to the digital experience. If you can order online and schedule a delivery, do returns and pick ups too. Walmart has around 10,000 stores across the world. 60% of America live within 5 miles of a Walmart and our secret to success is making sure our digital presence connects very seamlessly with your shopping experience whether it's at home you want deliveries or you're going to pick groceries three times a week.

As we build out capabilities in Bangalore, we're looking at investment in the supply chain. It's incredibly complex, I'll just take the US for example, effectively we have 30-50 distribution centers that you can ship from but then you have

5000 different distribution centers that you can get goods from. So it's a difficult math problem, and as you invest in the supply chain, we're looking for people like data scientists who can deal with these problems.

Q Globally is there a shift you've noticed in consumer behaviour between physically going to a Walmart vis-a-vis ordering online? Are you planning on expanding on the online presence in which case?

Jeremy: When I started four years ago, effectively the Walmart.com website - I'm generalising here a little - was only selling items online and helping to prepare for your shopping trip at the store. So effectively your online items were almost the same that you had in the store items. Since we have been onboard, we've expanded the assortment by 700%, so went from million items four years ago to 7 million items and we'll be expanding that to many more millions this year and beyond. So, the growth of the assortment is a key part of this, and you know I tell people sometimes the key task - is effectively to take that box (the store is often called the big box store) and to move the back wall because the back of the store is a very small sort of back room that you import your items and push it out to the store.

What we want to do is to have the showroom stock a lot less quantity of items but a lot more variety in items and then allow the digital experience to say "I want a different colour of that shirt, it's not in the store right now but I'm going to happen to be here anyway tomorrow so I'll just ship it to the store and pick it up." You can see a local assortment being captured together in a network of stores.

So, absolutely I think the customer expects that as well, they don't care whether it's online, mobile team or store's team, they all want it to work. I want to return an item online, I'll better be able to return the item in the store and there's nothing more annoying than that to deal with that kind of stuff. So these are the Omni-channel digital physical integration capabilities that we're dealing with. At Walmart we are talking about massive scale. I love the way the Apple Store works and the integration that they have done. It's great to have a thousand items in the store, but with Walmart we are talking 200,000 in a super center and seven million of them online that you want to integrate the stuff, it's a scale challenge. The complexity of the scale is enormous. We have 200 million customers walking into Walmart every week. These kind of scale numbers are almost hard to believe.



Apple buys Camel Audio

Camel Audio, the developer of Alchemy Software Synth has been purchased by Apple to improve its audio expertise <http://dgit.in/AppCamel>



You see social media sites having these kind of numbers, but we physically have these many people walking in and dealing with us. We have complex problems both online and the physical stores, dealing with our register systems, you know tens of thousands of transactions in a second during black Fridays or holidays. It's a great place to work if you want to work on technical challenges.

How do you work on this concurrent access problem? Here in India we've had a lot of launches recently – products that are really hot – and tens of thousands of people clicking at the same time to grab them – how do you resolve that? It's a major challenge here as well.

Jeremy: I've spent seven years in eBay and that's exactly the problem that eBay had. What's happened over the last 10 years is that we have seen a change in the amount of technology that you're able to use (even opensource technology) that can handle these type of scale problems. You look at the things that have been opensourced by LinkedIn, Facebook, Netflix and Walmart also open sources some of our technologies as well. There's been a rich history of building these things at these massive scales. We have these problems like crazy. Think about an Xbox on a Black Friday, how do you tell an online customer, how many Xbox consoles are there at the store on a black Friday because they're going off the shelf as fast as you can put them on. In addition to that units are all on customer's baskets and this is where some day, the internet of things can tell where in the store every single Xbox is.

From the technology standpoint, when it comes to keeping track of at least high value items how do you currently figure out where they are in a supply chain? Do you already use something like a RFID?

Jeremy: No, not yet, we have started experimenting with in our Sam's Club business, it is a little bit easier because it's a lot more assortment, less items in Sam's Club. You can really think about mapping the whole store real time. Mostly what we're interested in is things like customer behavior, when I come into a Sam's club and I want to pick up my order, often

times it's a palate of things. I'm reordering for my store, I'm reordering for my school, business and office supplies, and I don't want to stand there for 20 minutes while they bring the stuff out. There could be the Uber-like check ins at locations. Imagine you're like "hey I'll be at the store in like 20 minutes have it all ready." So we built kiosks for people who come in, mobile apps that allow you to do that. Same thing in Walmart, when your pick up item is ready, it will give you a notification that it is ready. I think in the long term there's a lot more work that needs to be done in order to do package tracking, on a massive scale. We built a product last year called Scanning that allows the customer to come in and effectively scan items and put them in your carts. When you go to the register, you scan what's on your list, it automatically comes to the register and then you just leave.

Someone in Korea had done that right?

Jeremy: Oh that was a virtual wall and we had that in China in Walmart as well and we've had that in the US but it was essentially a virtual environment where you go beep beep beep scan items off a wall, that sort of thing. In the UK for example, in the London Tube they have these ordering stations that you order on your mobile device in the morning and then when

Analytics (laughs). The mantra behind it is dealing with price and taking costs out of the system. Online this is an interesting problem, because a consumer has so many retailers just a click away, we want to make sure that we have the low price across the internet to remain competitive. How do you react to price changes? We've built not only the ability to understand what price other online retailers are selling things for but we also built a system called smart pricing that effectively takes that data plus our cost data, our score data, and an algorithm that effectively allows items to be automatically priced. To make sure we are not losing out.

Let's look into the future and know according to you, what should be the buying experience should be 5-10 years from now? What's the ideal experience?

Jeremy: I've seen some prototypes of devices with which you can take a picture of your cabinet and it'll know you're out of things. Also most people shop from a list and Walmart is smart enough to know that you shop with us enough, we know the frequency of when you need items. Shopping could soon be a really personalized experience where you get suggestions about how people like you also bought this, or we'll tell you we have a new special offer on a particular item, or the fact that other people

"We built a product last year called Scanning that allows customers to come in and effectively scan items off the shelf and put them in their carts."

you come back in the night, you have your two bags of items waiting for you. You just pick them up and walk in. It has really been great. The nice part of having a global footprint is you can experiment all over the world and take this capability into markets that make sense.

Any interesting thing in big data analytics that you guys are doing?

Jeremy: Yes, the Bangalore team in particular over the last couple of years has built out a capability we call the CIA, stands for Competitive Intelligence and

in your area have liked something. We can also see that when you shop online for your groceries, you have 80% of the stuff being bought again and again those will be automatically added in for you. We have already done a lot of this at Sam's Club and in Walmart on our website. You can see a lot more of that coming in the future. **1**

To read the full review where we talk about the future of shopping, the "Target Incident", and more, follow this link: dgit.in/jrmykng1 or Blippar this page.



Neptune's here

Neptune - a new startup headed by a 20 year old aims to upend the smartphone ecosystem with its wearable devices <http://digit.in/NeptWE>



RM 59-01 Tourbillion

If you're someone with deep pockets, this new RM 59-01 Tourbillion ultra premium watch by Richard Mille is for you <http://digit.in/RichWatch>

The tech companies behind all your other tech

There are many technology companies that are making big waves behind the scenes. Let's take a look at some of them.

Nikhil Pradhan

nikhil.pradhan@digit.in

Over the last decade, with the incredible proliferation of consumer technology, tech brands and companies have been forced into the limelight, whether they like it or not. As a result, even the most tech-phobic among us are aware that Google and Microsoft are a big deal, that Facebook exists, and that everybody and their grandmother uses an Android phone.

On the other hand, you have companies like ARM, Autodesk and Akamai that power many of today's popular technology products, services or standards, post billions of dollars in revenues and yet don't get public attention.

Let's take a look at 11 such companies that you may know little or nothing of:

Mindgeek: Of pornography & the Internet

Mindgeek is a media streaming and online content company that is behind a majority of the popular porn sites in the world. In fact, it owns the top 5 most visited porn websites on earth, three of whom are responsible for the most bandwidth consumption on the global Internet. In fact, Mindgeek's hold on the porn industry is so encompassing that it has often been called a monopoly. Mindgeek has also been



Credited for 30% of the World's traffic, yet unheard of by many.

criticised because the websites it owns offer free streaming media, a lot of which is pirated clips of adult videos and movies. However, it also owns a lot of the companies that distribute these movies, and allegedly makes it very difficult for copyright holders to get their content pulled from one of the free sites. Mindgeek's earnings are not made public but according to a 2013 news story, it should trend upwards of \$250 million annually.

Akamai: Delivering the Web to you since 1998

Have you visited Facebook or Twitter or downloaded a song from iTunes today? Then you have used Akamai's service. Akamai, based out of the US, is the world's largest online content delivery service and it claims that it caters to about 30% of the world's online traffic. If you happen to visit

any of the aforementioned websites, then what you actually see in your web browser is a replica of the website hosted on Akamai's servers. Akamai has more than 5,000 employees and posted a revenue of \$1.6 billion in 2013.

ARM: Intel's envy

Okay, ARM is not exactly an unknown company but there aren't many folks out there who know exactly what the company does. Many incorrectly believe that like Intel, ARM also makes processors, only for smartphones. Part of that statement is true; ARM does in fact, like Intel, design processors but it leaves the manufacturing to its partners like Qualcomm and MediaTek, who pay licensing fees to ARM. As a result, ARM's entire focus is on R&D which is how they can thrive with only about 3,000 employees globally. ARM estimates that



3D print guide

Ever wondered what sort of stuff is possible with 3D printing? Check out this guide to the complete 3D printing universe http://dgit.in/3D_Guide



Drones in farming

With so many new advancements in drones, some farmers are thinking of using drones during the farming process <http://dgit.in/FarmDr>

Feature

its chips are now used in 95 per cent of mobile phones globally and the company is now fast expanding into the embedded technology market and also has eyes on the enterprise market. In 2013, ARM posted a global revenue of \$1.1 billion and that number only looks like it will grow.

Autodesk: Games, Movies & more

Autodesk is an American software company founded in 1982 that makes tools used by architects, engineers, graphics designers and game makers around the world. AutoCAD, which is the most popular design and drafting software in the world, is probably the best known of Autodesk's products. Maya is another software tool that's used by VFX artists and has been used to create visual effects in movies and TV shows like Game of



Thrones, The Walking Dead, Avatar and The Matrix. Autodesk Gameware is a set of middleware tools that have been used in hugely popular games such as Far Cry 4, The Sims 4, Thief, Bioshock Infinite and Splinter Cell: Blacklist among many, many others.

The above tools are what makes Autodesk one of the most influential names in game development and movie visual effects. Autodesk has more than 7,500 employees and posted a revenue of \$2.2 billion in 2013-2014.

Go Daddy: The Internet's landlord

Go Daddy is the world's largest Internet domain registrar and claims that it currently manages 59 million domains globally. What this means is that if anybody from any part of the world wants to go ahead and start a website, chances are they'll have to pay Go Daddy an annual fee to continue using it for as long as they'd



Part of ARM's offices in Cambridge, England



GoDaddy's office in Silicon Valley

like. While many folks know of Go Daddy, they don't exactly know what it does which makes it eligible for this list. Go Daddy was founded in 1997, has more than 4,000 employees globally and is estimated to be worth about \$3 - 3.5 billion.

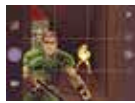
comScore: Tracking the Web

When you have millions of websites all craving for visitors, you need a service that attempts to accurately track where Internet traffic is actually headed. comScore is such a service that's one of the most popular

on the Internet and its lists of most visited websites are widely quoted and respected for their accuracy. As a result, despite you knowing it or not, many of your favourite websites depend on comScore's tracking metrics to determine their health and to plan for the future.

comScore claims that it tracks 1.6 trillion interactions on the Internet every month from users across 172 countries. comScore was founded in 1999, has over 1,200 employees and posted a revenue of \$285.5 million in 2013.

IMAGE CREDIT: OFFICE LOVIN



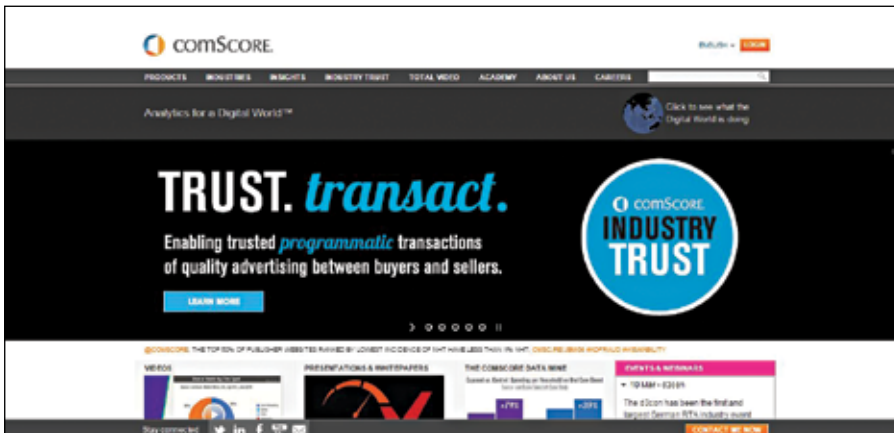
Selfie in Doom?

A new mod for the original Doom lets you use a selfie stick to snap selfies in the age old classic game <http://dgit.in/InstaDoom>



Better Call Saul

Miss Breaking Bad? We do too. But finally, its spinoff - Better Call Saul is here. So what are you waiting for? <http://dgit.in/SaulCall>



Accurate results that most of the web relies upon

Texas Instruments: One of the originals

Since it was founded in 1951, Texas Instruments has been one of the most influential companies in the transistor and semiconductor industries. It is the world's largest manufacturer of analog technology components and digital signal processors, and the world's second largest supplier of wireless networking chips for smartphones. While the company has said that it will significantly reduce its focus on smartphones, it's making steady inroads into the embedded technology market. Texas Instruments has offices across the world for its 32,209 employees and posted a revenue of \$13 billion in 2014.



The signboard at TI's headquarters in Texas, US

Broadcom: Chipping in

Broadcom is the world's largest fabless semiconductor company and is one of the world's leading suppliers of wireless chips used in everything from smartphones and TVs to routers and set-top boxes. Broadcom claims that its chips are so ubiquitous that 99.98 per cent of



Cambridge Science Park Broadcom building

Internet traffic on a daily basis 'crosses' at least one of its chips. In fact the most popular smartphones around the world use Broadcom chips including the iPhone 6 that uses a Broadcom touchscreen controller, the Galaxy S5 that uses a wireless module from Murata which incorporates a Broadcom wireless chip, the Galaxy S4 that uses Broadcom Wi-Fi and NFC modules and the Nexus 5 that also sports a Broadcom NFC controller and Wi-Fi module. Broadcom was founded in 1991, has about 10,650 employees and posted a revenue of \$8.43 billion in 2014.

Quanta Computers & Compal Electronics: The world's laptop foundries

Not many are familiar with Quanta Computers, a Taiwanese OEM company,



even though till just last year, it was the world's largest notebook manufacturer, when it was overtaken by Compal, also from Taiwan. Together, these companies basically make almost all the laptops in the world for manufacturers like Dell, Apple, HP, Fujitsu, Toshiba, Acer and Lenovo. Quanta Computers is also one of the largest server manufacturers in the world with an estimated 14% market share and also makes smartphones and TVs, just like Compal.

Quanta opened shop in 1988, has over 70,000 employees and posted a revenue of \$28.9 billion in 2013. Compal was founded in 1984, has over 43,000 employees and posted a revenue of \$2.1 billion in 2013.

Prysmian Group

With Internet and mobile connectivity permeating into every nook and cranny of our cities and towns, have you ever thought about how much physical cable must be used to connect everything? Well, Prysmian Group sure does, since it's the world's largest manufacturer of cables including those used in the telecommunications sector. Based out of Italy, the Prysmian Group manufactures optical fibre and cables, connectivity modules and copper cables.



A Prysmian booth at an industry exhibition

The company is so well known in its industry that CERN reached out to it to install the fiber-optic infrastructure at the Large Hadron Collider installation in Switzerland.

The Prysmian Group in its current avatar was set up in 2005 after a merger and has about 19,000 employees globally. It posted an annual revenue of \$9.16 billion in 2013. 



Enjoy

Safe

Holi

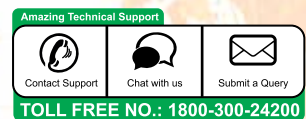
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ProDot
MAXIMUM SECURITY



TOTAL PC PROTECTION

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- Heuristic analysis
- Multilingual



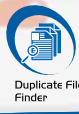
Parental Control



System Cleaner



File Shredder



Duplicate File
Finder



Task Manager



Virtual
Keyboard



Password
Manager



Start Up
Manager



Rescue Disk



/prodotgroup



/ProDotGroup



/prodotgroup1

www.prodottgroup.com



Charged in 60 seconds

A new kind of nanotech-based battery claims to charge completely in 60 seconds:
<http://dgit.in/60Batt>



Etsy supports net neutrality

Chad Dickerson, CEO of Etsy has joined the bandwagon to support net neutrality with a piece he wrote on Etsy's blog <http://dgit.in/EtsyNeu>

The loons will save the world!

We're rapidly and shamelessly destroying our environment, with no thought for the future or the survival of the human race as we know it. With the seemingly intelligent folk uncaring, it's time for the loons to lend a hand. Who knows? They might just be right!



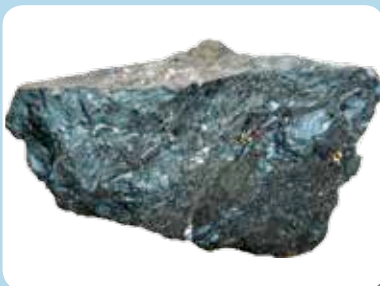
Sunglasses

What's cookin'? The Earth! So watcha gonna do? You give it a pair of goggles! Well, at least that's what certain groups are suggesting as a feasible way to counter global warming. The sunglasses in question can take the form of either a dust cloud from a captive asteroid (forced into orbit around the planet) or a sulphur cloud born of induced volcanic eruptions.

Cast iron excuse

"So we're pumping the planet full of CO2 eh? And it's already too much eh? How about if we lace the oceans with hundreds of thousands of tonnes of iron? It'll react with the CO2 and absorb the lot! No more CO2, no more worries, amirite?"

"Yesh, that'sh definitely a feashible idea. Let'shh do it, let'shh jusht shtuff the oceans with iron!"



Vegans r us

Now here's a radical idea. Why don't we all start walking for half an hour every day? We'll save the country a whopping 64 million dollars in healthcare and cut carbon emissions! Too radical? What if we all go vegan? We can cut down on over 18% of greenhouse gas emissions overnight! No? Hmm. What if we substitute the protein in our diet with insects? That'll also help.



Re-use refuse

Trees are the personification of life, of purity. They're the symbol of the future, of the survival of the human race and we take this life nurturing substance and convert into soft tissue paper to clean our, ahem, nether regions. This must stop! A group of researchers have suggested that using cloth toilet "paper" will save the environment quite a few forests.

Gaseous relief

Now we all know that the methane emitted by cows is 16 times more harmful than the more common greenhouse gasses. What a very few of us know is that the Kangaroo's farts are almost carbon neutral. Combine these two facts together, and the result is a group of scientists figuring out how to put the bacteria responsible for this into cows.



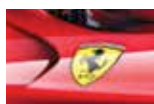
Beams of energy

Generating enough energy to power our cities and factories is extremely harmful to the environment and harvesting solar power on Earth is just not efficient enough. But what if we go off-world? Some Japanese scientists think that it's feasible to maintain a gigantic solar panel in space that's beaming energy down to our power-hungry planet.



Uber trying to improve

Uber has partnered with Safepin in order to collect data to gauge safety of neighborhoods in India http://dgit.in/Uber_Safety



Future of F1

Ferrari's F1 team introduced a new site with designs of its concept cars for the future. Read more here: <http://dgit.in/F1Futu>

Unwind

How we unwind



Band of Brothers

We've been subjected to a multitude of WWII themed games, movies and TV shows over the years, but few have ever managed to capture the true nature of war in as touching and as gritty a fashion as Band of Brothers. The team finally sat down to watch the series again and have been glued to their sets ever since.

Cricket World Cup

As Indians, do we even need to describe what it is that the Cricket World Cup means to us? Every spare minute is spent staring at our screens (Google Now is a godsend) and arguing about the outcome of the matches that are in progress at the moment. Everything else takes second place to the true joy of cricket.



Darts

Someone setup a dartboard in our office and every time any of us steps out of the TC, we make it a point to put a few darts in the wood. While Big Daddy and Staticsid are quite competitive (and skilled) when it comes to the game, others like Regidi are quite content to have their darts hit the vicinity of the board.

diGit DIARY

It's a time for great joy and celebration, for another of Creepicheep's progeny (Creepicheepka Beta) was caught and summarily executed! If you think that judgement harsh, hear his tale you must.

The rat in question has been terrorising the office in its father's name, boldly mounting raids in the dark of the night, oblivious, or unconcerned by the fearsome geeks (us) that lay prostrate on the floor. It stole food, spilled Thums Up on Raaabo's keyboard and left its excrement on TC equipment with a marked lack of forethought and some degree of respect and an instinct for self-preservation that was Creepicheep's forte.

Creepicheepka Beta's brashness was his undoing however. A couple of nights of observation led us to the discovery of his major weakness, instant coffee. Well, instant coffee sachets anyway; a weakness that we uncovered on discovering a packet of instant coffee that bore undeniable signs of Creepicheepka Beta's handiwork.

Weakness uncovered and coffee sachet in hand, Mithun set about setting up quite an aromatic trap for the heir of a fiend. He very carefully wrapped a couple of sachets worth of instant coffee mix in a tissue and slung it on the trigger of a rat trap, strategically placing the trap in the vicinity of Creepicheepka Beta's regular stomping ground. Come nightfall, the captivating aroma of the coffee dragged the rat out of his hole and drew

him into the trap, gently caressing Creepicheepka Beta's olfactory cells.

The rat was brave, we'll give him that, but he could just as well have been utterly foolhardy for when he hit the trigger and the trap closed on him, his tail was trapped by a powerfully spring-loaded cage door and he never even uttered a cheep! He was content to spend the last few hours of his life already high enough (on coffee) to scrape the bottom of Heaven's surface.

Moving on from these sordid tales to something more lively, we arrive at the night the Ant decided to make his presence felt in the TC. Buried under a pile of work and struggling to write and proof articles through bleary eyes, we set upon that innocent lad with the full force of our wit (what little we had left). While he'd come with the ostentatious purpose of assisting us with issue closing, he had

inadvertently (as always) provided us with an inimitable form of stress relief that always does more for our morale than any match of Quake or hilarious meme can provide.

The incessant haranguing left the lad more than a little flustered and mentally reeling. His outburst was a little bit startling to say the least and prompted Sid to blurt out, "Oho, this Kitty's got claws! <evil grin>; not to be outdone, Big Daddy pointed out that "While kitty's do have claws, this pussy's only got paws <deep, rumbling laughter>. I know, I know, we're a bunch of heartless bast**ds, but hey, even the Ant took it in good fun.





Where's the tech?

Technology is driving everything now and it's the revolution of the generation but somehow schools are missing out on it. Know why: http://dgit.in/Sc_Miss

Tricks you should know

If you're a tech geek this is a list of top 10 tricks that you should know by the back of your hand: <http://dgit.in/TechTricks>



Every month we highlight some aspiring tech writers and their spirited attempt to get published in the magazine. Let's have more!

Create your own website visitor counter with PHP & MySQL

Using a third-party tool to count your page views? You don't have to anymore. Create a personalised counter and code it with this guide



Praneet Sab

You've probably tried Google Analytics or another service to track the amount of views that your website attracts. While either service is indeed the best option to go with, creating things on your own is always more exciting, no matter how many mistakes are made along the way. Coding a visitor counter is relatively easy if you have the right resources. We're assuming

here that you've used PHP and MySQL, at least till the level of "Hello World!" You'll also need to install a popular PHP development environment called 'XAMPP' for Windows or 'MAMP' for Mac. But, of course, if you've already purchased a hosting server online, then you can use that instead.

Before we work on the code, let's familiarise ourselves with what exactly we'll be building and the flow of the program. The whole code is written in a single file that we'll name "index.php". When the user visits your website, say, www.your-website.com, "index.php" will load and display the user's IP address. It could look something like this: "Hello 127.0.0.1". This would be followed by "This page has been seen yyyy times by xxxx different people on earth." We'll be storing two different things in our database: the IP address of the visitor (so that we can know the number of unique visitors to the site) and the frequency of page views by the same IP address. "Page Views" (yyyy) and "Visitors" (xxxx) are different terms, so don't mix them up.

Let's begin by creating a database

The first thing we're going to do is create a database in MySQL and call it "visitors". Using "phpMyAdmin", open up this "visitors" database and run the SQL code found in this pastebin paste: <http://dgit.in/DatabaseCreation> to create the tables in your database.

The SQL code given in the pastebin paste will create a table named "visit" and include three columns in it. The first column is for "ID" with "Auto_Increment" property. The second column is for "ip_address", which we'll use to store the IP addresses of each site user. And the third column is for "visit_count" – this is for unique visitors to your website who visit more than once. Each time this user stops by, the value in this column is incremented by 1.

We're now done with the database, all we need to work on is the code. We'll be taking each part of the code (in series) and explaining them. Your task is simply to understand and write them all in a single .php file.

Adding the <head> tag

Here, we're firstly beginning the HTML code by opening PHP under the <head> tag. Next we're going to connect with the MySQL Database. You can change the details as required. This will probably be the password and the database name, if you plan on using a name other than "visitors". Lines 4 and 5 are used to connect with the database as per the information given in lines 1, 2, 3 and 4. Then, using the <title> tag we'll define the page's title and be done with the head part. You can check out the code for this part on this pastebin paste: <http://dgit.in/AddingHead>

Moving on to the <body>

```
<body>
<?php
$user_ip = $_SERVER['REMOTE_ADDR']; //6
echo "Hello $user_ip"; //7
```

Let's open up the "body" tag and inside it, we'll open another "php" tag. The 6th line is declaring a variable "\$user_ip" which will hold the user's IP address by using the "\$_SERVER['REMOTE_ADDR'];" function.

Note: Line 7 is optional. We've simply added it to check whether we're getting the correct IP address. If you're using a local server (XAMPP), then you won't be able to get your real external IP address and this is where the local servers fail. To overcome this problem, you may want to try the same with a remote-online-server. To get one for free, head over to neq3.com or heliohost.org. If you can afford to buy, then go with Bigrock or Hostgator's Linux plans.

Store the User's IP address, page views and visitor count

Find the code for doing it on this pastebin paste: <http://dgit.in/StoringUserIP>. This code is the most important one, as it's responsible for storing the user's IP address along with the number of page views by that IP address. We're using the



Lenovo taken to court

After it was revealed that Lenovo pre-loaded Superfish adware on its consumer PCs, it's now facing a lawsuit over it <http://dgit.in/LenLaw>



I see everything!

In yet another win for science, a bionic eye enabled a 68 year old blind man to see again. More here: <http://dgit.in/BionicE>

Digit Squad

CRYPTCHAT



About the creator

Umang Raghuvanshi is a self taught programmer who loves technology. He believes that software must be open source and strongly believes in the right to privacy of every individual and tries his best to make sure it is guaranteed through his work. Umang aspires to be a software developer

in the future and owes his achievements to his family, friends and Digit. He has been obsessed with computers right from childhood and has always proved to be a nuisance to his teachers since he is never found in classes but mostly in the computer lab. At the age of 13, after the revelations done by Edward Snowden about NSA's espionage techniques, Umang got enough motivation to build a secure app.

About his creation: CryptChat

CryptChat is essentially a messaging app for Android that is completely decentralised and uses end-to-end encryption. It stands pretty strong against standard data breach attacks, utilises the Tor network and is completely open source. As a proof of concept, CryptChat has an early alpha build hosted on Github, so check it out. Umang plans to launch the final stable version on the Google Play Store soon.
<http://dgit.in/GitCryptChat>

"INSERT ... ON DUPLICATE KEY UPDATE" syntax. There are other ways also to achieve the same result, but they call for avoidable and unnecessary coding. The 8th line contains this syntax and will store the value of variable "\$user_ip" in "ip_address" column and value '1' in the "visit_count" column. However, if the "ip_address" already exists, then instead of storing the IP address again, it will increment the "visit_count" column corresponding to that IP address by 1. The 9th line will now execute the 8th line along with 4th line. The 10th line checks whether the 9th line was successful in adding information to the database. If not, then the 11th line will display the error. If you want, you can remove the 10th and 11th line, since they're helpful only during development.

The next part is easy. All the code does is count the total number of visitors by counting the number of rows in the "ip_address" column and then storing it in variable "\$total_visitors". This is done by line 12 and 13. Line 14 and 15 will sum up all the numbers in the "visit_count" column, while line 16 will store the result in variable "\$sum".

Make the count viewable to visitors

```
<br /><br />
```

```
This page has been seen <?php echo "$sum" ?>
times by <?php echo "$total_visitors" ?> dif-
ferent people on earth.
```

```
</body>
```

```
</html>
```

Finally, the last part of the code. We'll start with a few `
` tags to make it look good, and then you can open up php tags to echo the 13th and 16th line at the right place.

Trouble-shooting any issues

Everything's done, now all you need to do is save all this in a .php file and upload it to your server. If you face any problem, check parentheses and database information. Apart from this, if you're too lazy to type the whole code, then visit <http://pastebin.com/z9YeJKGb> where you'll find all the code.

If you want to track many pages, then you can use the "include_once" function in PHP to include the program in every file. Also, unless you want your users to see your website's view count, remember to remove the "echo" part. If you want it to be visible, you might consider adding some CSS elements to revamp the design.

This program is good as long as only views and visitor count matters to you. But if you want some real insights, then nothing is better than Google Analytics or other third-party solutions that are available. Regardless of the option you choose, now you know how to count views with PHP and your coding skills. Here's a link for all the code that's missing in the article: <http://dgit.in/ViewCounter>. Go have a look. 📌



PC, Laptop
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